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# USSR Report

HUMAN RESOURCES

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## LABOR

### BATALIN ON LABOR COLLECTIVES, PRODUCTIVITY INCREASE

#### Labor Committee Chairman Interviewed

Moscow EKONOMICHESKAYA GAZETA in Russian No 32, Aug 84 p 2

[Unattributed interview with Yu. P. Batalin, chairman of the USSR State Committee for Labor and Social Problems: "Effectiveness of the Collective"]

[Text] [Question] A year ago, the USSR Law "On Labor Collectives and Increasing Their Role in the Management of Enterprises, Institutions and Organizations" came into effect. How in fact are the provisions of this major document being carried out?

[Answer] As of now, comparatively little time has passed. However, even during this short period of time, the Law Governing Labor Collectives has confirmed its importance and timeliness and has had a beneficial influence on the economic and social life of the nation.

The law has granted the labor collectives broad powers also in the area of organizing labor, wages, bonuses, material and moral incentives. Now they are adopting decisions on the specific areas of use, they discuss, approve and monitor the estimates for the expenditure of the economic incentive funds.

There are already examples when the general meetings of workers have raised questions of depriving bonus remuneration to individual leaders of the shops, services and enterprises for their shortcomings in work. Conversely, in a number of instances, upon a decision of the labor collectives additional incentive measures have been employed.

In the labor collectives they make it a practice, in accord with the law, to hear the administration on the course of carrying out the 1984 plans and obligations. Here the general meetings work out specific recommendations which should be followed by each collective member.

The effectiveness and practical value of such initiatives are backed up by supervision from the labor collectives. In particular, EKONOMICHESKAYA GAZETA in recent issues has described the check on the fulfillment of obligations at a number of enterprises.

Unfortunately, one also encounters manifestations of formalism. There have been numerous warnings of the administration's desire to follow the old methods, not bringing the most important questions up for discussion at the general meetings and replacing the decisions of the labor collectives with orders. Such instances, certainly, are being properly assessed. It also happens that new social formations are established which duplicate the previous ones or assume the powers of the labor collectives. For example, at the Volgograd Tractor Plant they have formed three disciplinary commissions while the powers of the labor collectives in this area have been unrealized. A typical example of a formal attitude toward the possibilities opened up by the law. In almost a year the commissions have not reviewed a single instance of disciplinary violations.

Practice shows that the greatest effect from the provisions of the Law Governing Labor Collectives has now arisen in the brigades.

[Question] Our readers, Yuriy Petrovich [Batalin], are interested both in the achievements and prospects of development for the brigade forms. Please tell us what has been done and what are the areas for further work.

[Answer] As was pointed out by Comrade K. U. Chernenko, through the development of the brigade form, "an effective way fitting our system has been found to increase labor productivity. A correct method has been employed for combining the personal interests of the worker, the collective and society. And this is one of the fundamental questions of socialist construction both in economic, sociopolitical and indoctrinational terms."

Recently an interdepartmental council under our committee reviewed and analyzed a number of questions related to a further rise in the effectiveness of the brigade forms for organizing and encouraging labor. Both successes and shortcomings were pointed out.

It is no secret that some enterprise leaders are persuaded that it is merely a question of bringing the workers together into a brigade and immediately labor efficiency will noticeably rise and the indicators improve. Actually the brigade movement brings significant results only where the technical-production, economic and social prerequisites of collective labor have been established ahead of time and where they unswervingly observe the principle of the volunteer joining of brigades.

Let me give some figures characterizing the state of affairs, utilizing data from the 1983 statistical reporting.

In industry, 64.7 percent of the workers are employed in brigades. The highest share of them (approximately three-quarters of the workers) are to be found in the USSR Minrybkhkh [Ministry of Fish Industry], Minavtoprom [Ministry of Automotive Industry], Minenergomash [Ministry of Power Machine Building], the USSR Minlesbumprom [Ministry of Timber, Pulp and Paper and Wood Processing Industry] and the USSR Minmyasomolprom [Ministry of Meat and Dairy Industry]. This, as they say, is the quantitative aspect of the question. Now about the qualitative.

The new type of brigades are primarily consolidated, comprehensive collectives operating under a single schedule, with payment according to the end results and the distributing of earnings according to the KTU [labor participation coefficients]. It is no question of making a small brigade into a large one or mechanically bringing together the workers of different specialties. The main thing is to coordinate the organization of labor with the production methods, to broaden the production specialty of the workers and reorganize (considering the particular features of brigade labor) planning, management and the material incentive system. In this context the brigades should be made technologically separate and they should be assigned complete processes and operations, major assemblies or sets of parts. In this manner, conditions are created for employing consolidated standards and estimates for the work to be done, norms for the expenditures of resources and, respectively, estimates for the brigade's activities in terms of the end results. The main thing is that such collectives should cover their costs and be the true masters of production. In my view, if there is a possibility to take into account even one type of material resource, the expenditure of which the brigade is capable of influencing, then one must more boldly introduce the elements of cost accounting so that the amount of earnings depends upon the savings.

Let us return to the figures and examine how in practice the new types of brigades are being introduced.

In 1983, 79.3 percent of all the brigades in industry worked under a single schedule order. It was 91.5 percent in the Minsel'khoz mash [Ministry of Tractor and Agricultural Machine Building], 63.4 in the USSR Minneftekhimprom [Ministry of Petroleum Refinery and Petrochemical Industry], 88.9 percent in the Minryb-khoz and USSR Minpishcheprom [Ministry of Food Industry] and 51.2 percent in the Glavmikrobioprom [Main Administration of the Microbiological Industry].

The share of brigades paid according to the end result is 64.6 percent. At the same time, out of the total number of workers in the brigades, only 24.3 percent are employed in start-to-finish collectives which bring together several shifts.

In comparison with 1981, the number of collectives operating on cost accounting has almost doubled. However, the share of them in 1983 was just 14.7 percent of all the brigades. At the same time that in the Minsel'khoz mash around two-thirds of the brigades work under cost accounting conditions, in the USSR Minmyasomolprom, 1.8 percent have been switched to it, 2.5 percent in the Minpishcheprom and 3.7 percent in the Minlegpishchemash [Ministry of Machine Building for Light and Food Industry and Household Appliances].

As we can see, behind the average figures is a rather motley picture. And it is not a question so much of the sectorial particular features as it is one of a varying approach to the problems of introducing the progressive forms.

I would like to draw the attention of the weekly's readers to what in my view is an interesting trend. Two decades ago, approximately three-quarters of the workers were piece workers and now just 54 percent. For this reason the involvement of workers paid on a time wage in consolidated, integrated collectives is, in our opinion, one of the main ways for the development of the brigade forms. All the more so that a large percentage of the time workers is characteristic of



sectors and enterprises with a high level of production mechanization and automation.

The question of the qualitative aspect of the brigade organization of labor should come to the forefront. In this regard, we feel that the main direction along which collective labor will develop is the contract.

The advantages of a contract are well known and proven at many construction projects, and recently in agriculture and the industrial enterprises. They are based primarily on a strong collective interest in the end result and on the fullest development of labor ethics, the ethics of collectivism. The contract brigades include time workers, piece workers, engineers and technicians. They all in fact are converted to a collective piece form of wages which depends upon the jointly achieved end result.

The time has come to extend the principles of a collective contract not only to brigades but also to larger subdivisions, including sections and shops. Since January of the current year, the USSR Goskomtrud [State Committee for Labor and Social Problems] together with the AUCCTU and the Novosibirsk Party Obkom has been conducting a detailed experiment in 15 shops and 37 sections in 13 enterprises of various sectors of industry, transportation, agriculture and consumer services in Novosibirsk Oblast. The first results obtained over the 6 months show the promise of this initiative. In the course of the experiment we plan on disclosing the general trends and patterns and from the results of this provide general recommendations.

[Question] The consolidating of the brigades, the focusing of them on solving independent production problems and the collective contract, as the letters to the editor have shown, have raised a number of questions involving the training of the junior production commanders.

[Answer] The USSR Goskomtrud has also been receiving such letters. The development of the brigade movement has promoted a whole galaxy of very talented leaders from the workers. The modern brigade leaders each day and each hour in fact prove their remarkable organizational and high moral qualities. Otherwise the workers would not trust them. Precisely the brigade leaders are the gold stock for adding to the detachment of engineers and technicians. It is very important to help them obtain a secondary specialized and higher education either on the job or as a full-time student. And this must be done without delay.

Definite changes can already be noticed here. The USSR Minvuz [Ministry of Higher and Specialized Secondary Education] has adopted a decision on opening up a new specialty "The Organization of Production." In the 1984-1985 academic year, future management engineers from the brigade leaders will be admitted to the evening divisions of the Moscow Aviation Institute, the Vorohezh Polytechnical Institute, the Leningrad Economics Engineering Institute and the Ryazan Radio Engineering Institute. A list of specialties (66 names) has been set for which the students will obtain the skills of production organizers in the specialized secondary schools. In the new academic year, the technical schools of the industrial ministries as an experiment will teach such specialties.

In a word, the first but very promising steps have been taken. Incidentally I would point out that training for production organizers from among the experienced brigade leaders in the VUZes and technical schools has been planned by a well known government decree and is a component part of the program worked out by the USSR Goskomtrud and the AUCCTU for developing and increasing the effectiveness of the brigade form of organizing and encouraging labor in industry for 1984-1985.

[Question] Please tell us more about the program. Just what is it?

[Answer] This composite document should pool the efforts of all the subdivisions of the USSR Goskomtrud, the appropriate committees of the Union republics and 29 industrial ministries in resolving a common problem. The aim of the program is to accelerate the growth of labor productivity, to achieve high end results with the least expenditures, to strengthen socialist labor discipline, and to increase the stability of the labor collectives and the social activeness of the workers on the basis of the broad and effective introduction of the brigade form of organizing labor. Along with the quotas of the national economic plan to increase the number of workers engaged in the brigades and thereby obtaining an economic effect, measures have been planned to ensure an above-plan increase in labor productivity and an additional reduction in product costs.

The program includes a coordinating plan for scientific research and elaborating the normative-procedural documents related to the collective forms of labor. A special section contains a range of specific measures to achieve the designated goals. Let me emphasize that the quotas and measures of the program are of a directive sort.

At present, it is vitally important to link the measures in improving economic planning and management with the development of the most progressive forms for the collective organization of labor and wages and actually realize a unity of management principles from the brigade and shop up to the enterprise, the sector and social production as a whole.

#### Ways of Increasing Labor Productivity

Moscow PRAVDA in Russian 4 Sep 84 p 2

[Article by Yu. Batalin, chairman of the USSR Goskomtrud: "Ways for Increasing Labor Productivity"]

[Text] In relying on a profound analysis of the existing situation and the ways for improving developed socialism, our party has posed the problem of a major increase in labor productivity.

In recent years, definite positive shifts have occurred in this area. While in 1981-1982, labor productivity in industry rose by an average of 2.4 percent, in 1983 by 3.5 percent, over the first half of the current year the figure has been 4.2 percent. Ninety-five percent of all the increase in industrial product was achieved from this. Labor efficiency in construction has risen. In rail transport, a significant increase in the shipping volume was achieved with a constant number of personnel.

It is important to reinforce and strengthen the positive changes and turn them into a constant trend. For this it is essential to mobilize all the factors for increasing labor productivity. The most important of these is to introduce the achievements of scientific and technical progress. This will provide the greatest effect if it is aimed at the greatest possible savings of labor and, particularly importantly, at the fullest development and utilization of the abilities of each worker, what we call the human factor. The elaboration and application of methods for using this as a powerful accelerator to economic growth is at the center of attention of the USSR Goskomtrud bodies.

The certification and rationalization of the work areas helps to disclose and utilize the reserves for increasing labor productivity. This effective form of organizational and economic management has been raised by life itself. It should encompass all sectors and regions of the nation and be carried out with the active involvement of the workers.

In the certification process, each work area is assessed according to an aggregate of production, organizational-economic and social criteria. It is ascertained to what degree the means of production, the skills of the workers themselves as well as the forms of labor specialization and cooperation conform to present-day requirements. Obviously in the future, it will be wise to certify sections, shops, production processes and enterprises as a whole. This will provide an opportunity to work out a sound program for modernizing the work areas, to take out of operation their obsolete part, to focus labor resources on the most highly productive equipment and improve the utilization of capital investments and more effectively train the worker personnel. As a result of certification, we will also ascertain the state of the productive forces and to what degree the organizational-economic relations in the inferior production level correspond to them.

The effectiveness of this work can be seen from the experience of many enterprises in Dnepropetrovsk and Kuybyshev Oblasts, Moscow and Leningrad and the USSR Minsel'khoz mash.

The planned elimination of obsolete work area helps to achieve a decisive change in reducing the expenditures of manual labor and in improving production effectiveness. At present, more than 50 million persons are employed in manual labor in the national economy. There is a particularly high share in construction, agriculture, the coal and food industries, in trade, as well as in auxiliary jobs in all sectors.

However, the quotas for freeing personnel from manual jobs as yet have been set only for industry and these are very lax ones. During the 11th Five-Year Plan, the reduction in the number of persons employed in manual labor in industry is annually about 180,000 persons. The plan quotas have been particularly significantly underfulfilled at the USSR Minugleprom [Ministry of Coal Industry], the Minkhim mash [Ministry of Chemical and Petroleum Machine Building] and Minzhiv-mash [Ministry of Machine Building for Animal Husbandry and Fodder Production].

In order to more successfully solve this problem, it is essential to complete more quickly the elaboration of a specific integrated program for reducing the expenditures of manual labor. This should encompass the entire national



economy. The program should be reinforced by the production of mechanization. The system of job certification should provide great aid in choosing the priorities of technical progress.

Along with a further rise in the output of robots and automatic manipulators, at present it is urgently needed to substantially broaden the production of hand tools, machinery and mechanisms for auxiliary production. According to estimates this will make it possible to eliminate up to 60 percent of the manual jobs. Local opportunities are being widely utilized to produce the means for mechanizing manual labor in Latvia, Zaporozhye, Kuybyshev and Sverdlovsk Oblasts as well as in Moscow and Leningrad.

Certification and rationalization of the work areas should also serve as a powerful catalyst in the technical reequipping of production and in reconstructing the existing enterprises. In speaking about reconstruction, usually the emphasis is placed upon the saving of capital investments and the speed of renewing the fixed capital. In our view, equally important here is a solution to the urgent problems of labor. Even in the stage of designing the enterprises, determining the production methods and the design of the machinery, it is essential to fully consider also the functions which will be performed by the workers in the labor process as well as working conditions and interest. For these purposes NOT [scientific organization of labor] requirements have been worked out for designing. However, these are little employed by the ministries, design organizations and enterprises particularly in working out reconstruction plans.

The April (1984) Plenum of the CPSU Central Committee set the task of increasing the influence of the local soviets on the growth of production effectiveness and the integrated development of the economy. Certification and rationalization of the work areas provide the local soviets and their bodies with an effective tool for working out the labor resource balances, for setting limits on the number of personnel and monitoring the rational utilization of the labor force. This will make it possible to increase production efficiency and thereby raise the local budget income.

Another major area for a fundamental rise in labor productivity is a strengthening of collectivist principles and the effective use of the brigade form of organizing and encouraging labor. Here we see the basic task in uniting the development of the most progressive types of brigades with measures to improve the system of managing the socialist enterprises. Such an organic unification is achieved primarily through the contract form of organizing labor and wages.

As is known, its essence is that in organizational and economic terms the entire contract collective which performs a relatively distinct work cycle is aimed at an end result upon which the amount of collective earnings depends. A contract collective will include piece workers, time workers and, in the necessary instances, also engineers and technicians. All of them in fact are converted to the collective piece form of the organization of labor and wages. This makes it possible to best combine the economic and social advantages of collective labor with the effective incentives and to integrate the interests of the workers, the collective and society.

In our view, a contract should not be restricted to the level of brigades. The time has come to extend it to larger formations so as to more fully realize the principles of collectivism inherent to socialism on all management levels and to achieve qualitatively new results.

Such an experiment is now being carried out by the USSR Goskomtrud together with the AUCCTU and the Novosibirsk party obkom at 15 shops and at 37 sections of 13 enterprises in various sectors of industry, transport, agriculture and consumer services of Novosibirsk Oblast. Although not much time has passed since the start of the experiment, high results have been achieved at the enterprises.

The extensive development of a contract makes it possible to bring cost accounting to the grass-roots level and to reorganize the relations between workers engaged in the production of material goods to the principles of socialist thriftiness and entrepreneurship.

Recently many new collective forms of labor have appeared. Thus on the Lvov Railroad workers from different enterprises and services (traffic, locomotive, car, track, energy and others) which are connected by a single production chain but were previously split in organizational terms have been brought together in consolidated, comprehensive brigades. Crucial for the organizing of such brigades has been the correct choice of the end indicator for their operation, that is, the "dispatched car." For example, at Sambor Station, just a half year after establishing such a collective, labor productivity has increased by 9.1 percent while the dispatching of cars has risen by 15,700.

Collective labor under the conditions of cost accounting provides the greatest effect when unified planning and management principles are applied on all levels from the brigade to the national economy as a whole. The readers of PRAVDA are aware that a broad economic experiment to extend the rights and responsibilities of the enterprises has produced positive results. At many enterprises of the ministries operating under the new conditions, the increased rate of labor productivity has risen substantially. However, we feel that the successes could have been even greater if the principles of the experiment and the indicators for assessing economic activity at the associations and enterprises had been brought down to the level of the shop, the section and the brigade.

The USSR Goskomtrud, together with the Ukrainian Minposhcheprom [Ministry of Food Industry] with the experiment, has worked out a provision which provides that the brigades will be given quotas for product output in an assortment, proceeding from the contracts concluded, including for high-quality products. In determining labor productivity, they have abandoned an assessment of the over-fulfillment to the output norms and instead of this have set quotas for reducing costs. Of important significance is the introduction of a norm for forming wage funds for the brigades calculated in terms of end product. For this, they use the indicator "Comprehensive Piece Rate Per Unit of Product." The brigades are also given quotas for reducing normed losses of raw products and materials and standards for the consumption of fuel and energy resources.

There is a number of new interesting initiatives and the results achieved by many labor collectives are impressive. But still the potential of the brigade form is far from fully utilized. We feel that here the main problem is an

infatuation with the quantitative aspect of the matter, often to the detriment of quality. Thus, only one-half of the brigades in industry is working according to a single schedule order with the distribution of collective earnings according to the KTU. The share of brigades operating on cost accounting last year was less than 15 percent of their total number and, for example, just 1.8 percent in the USSR Minmyasomolprom, 2.5 percent in the USSR Minpishcheprom and 3.7 percent in the Minlepishchemash.

The USSR Goskomtrud has analyzed the opportunities for increasing labor productivity by NOT measures and primarily on the basis of introducing a system of certifying and rationalizing the work areas, developing collective forms for the organization and encouragement of labor, improving norm setting and so forth. According to the figures, merely due to NOT, labor productivity in industry in 1985 could be increased by 2.2 percent and by 10-12 percent in the 12th Five-Year Plan. That is, the quotas for this indicator could be increased by approximately 1.5-fold in comparison with the previous period.

Serious problems have arisen in the entire wage system. In particular, it is essential to more soundly set the norms for forming the wage funds for the ministries and enterprises, to improve labor norming and increase the effectiveness of the bonus systems. It is essential to rectify the discrepancy in wages according to personnel categories and the individual vocational-skill groups and sectors.

In our opinion, it would be effective to fundamentally alter the procedure for introducing the new wage rates and salaries. The simultaneous introduction of them using funds of the state budget is obviously obsolete. The new wages and salaries, we feel, must be introduced as internal resources of the enterprises which are sought out and acquired as a result of increasing production efficiency and strictly within the limits of the norms set for them for wage funds. One of the important advantages of the proposed mechanism for introducing the new wage rates and salaries is that it will help in the more rapid growth of labor productivity in comparison with the growth of wages.

All the problems of labor and wages are closely interconnected. They cannot help but be considered in selecting the areas of technical progress, investment policy and the location of the productive forces. For this reason in compiling the national economic social and economic development plan for the 12th Five-Year Plan, it is essential to work out a specific integrated Labor Program aimed at the fullest utilization of the nation's labor potential and at solving the social problems of labor.

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## LABOR

### SMALL, MEDIUM-SIZED TOWN LABOR REQUIREMENTS VIEWED

Moscow SOTSIALISTICHESKIY TRUD in Russian No 6, Jun 84 pp 58-63

[Article by A. Maykov, first deputy chairman of the RSFSR State Committee of Labor and Social Problems: "The Labor Resources of Small- and Medium-Sized Cities"]

[Text] In the planned regulation of the increase in urban settlements, the problems of developing the small- and medium-sized cities hold an important place. The decisions of the 26th CPSU Congress provide for a consistent line of locating in them specialized, highly productive types of production as well as the affiliates of enterprises and associations.

At present, the RSFSR has 860 small- and medium-sized cities or 85 percent of all those located on the republic's territory. Living in them is 26 percent of the republic's urban population and its size is relatively stable. Since 1970, around 14 new cities have arisen. Such cities play a substantial role in the republic's economic development. Enterprises from virtually all the industrial sectors are concentrated in them, particularly lumber, woodworking, pulp-paper, fuel, light and food. The medium-sized cities have a high share of employees in machine building and metalworking.

A significant portion of this category of settlements has developed as industrial centers and many of them are involved in the processing of fuel, energy and mineral raw material resources. Other small urban settlements are located in the zone of influence of the industrial centers and complement the economic complex of the large urban conglomerations. In line with the implementing of the Food Program, an increasing role will be played by the small- and medium-sized cities which serve as the support centers for the agroindustrial associations being established. Concentrated in them are enterprises involved in the processing and storing of agricultural products and the servicing of agricultural production. They also have great importance in the administrative-economic, cultural-domestic services for the population of the rural areas which gravitate to them. More than 70 percent of the small- and medium-sized cities are rayon centers with a predominant share of the cultural and service facilities. Finally, there is one other category of the small- and medium-sized cities which have favorable natural and climatic conditions and architectural and historical monuments. These are primarily resort and tourist centers.



Over the last decade positive changes have occurred in the development of the small- and medium-sized cities. The volume of state capital investments into their social production has increased substantially. However, as yet the majority of small- and medium-sized cities lags behind the large cities in terms of labor and living conditions as these are, as a rule, multifunctional centers. Such a gap in the level of economic development, public amenities and services for the population is undesirable both from the economic and social viewpoint.

Characteristic of many small- and medium-sized cities is a discrepancy in the structure of the production sectors and a lag in the construction of housing and sociocultural and domestic projects. These are expressed in a limited sphere for the application of labor. This retards their development and leads to an efflux of the population and primarily the youth. In turn, this causes a warping of the sex and age structure of the population and has a negative influence on its natural increase.

A solution to the problem of improving the labor resource utilization and keeping the population in the small- and medium-sized cities is related to the placement of industrial production making it possible to improve the employment structure of the population and improve their living conditions. But it cannot be considered that the employment level of the working-age population is close to the limit in a majority of the RSFSR small cities. Over the period between the population censuses (1970-1979), the proportional amount of labor resources not engaged in social production in the small- and medium-sized cities declined significantly (by approximately 1.7-fold). According to the data of the Central Scientific Research Laboratory for Labor Resources (TsNILTR) of the RSFSR Goskomtrud [State Committee for Labor and Social Problems], in 1979, there were just 150 cities with labor reserves over 100 persons, including in 25 where this indicator exceeded 500 persons. Moreover, a predominant portion of the unemployed persons in these cities is made up of women who have children and do not always possess the required professional training.

Under such conditions, the intensive development of an industrial base in the small- and medium-sized cities can lead to the rise and growth of manpower shortages for their social production and require an influx of a labor force from the population of the near-lying rural territories and for which these cities are not yet prepared.

However, up to now instances have been encountered of the locating of new enterprises and the expanding of existing ones in small- and medium-sized cities without proper consideration given to the labor resource factor. This has led to a deterioration in the sociodemographic structure of the population and to the underutilization of the economic potential of these cities. For example, during the years of the Tenth Five-Year Plan, in the town of Suvorov (Tula Oblast), a factory was built to produce bulky thread and designed for 1,700 workers, with more than 76 percent being women. The factory was to be provided with a labor force from the population of both the town and other settlements. As a result, just over the period from 1971 through 1977, the share of women among the workers and white collar personnel of the city rose from 50 to 57.7 percent. However, this was not all. The more rapid increase rate in jobs in comparison with the growth rate of labor resources led to the understaffing of the factory and to the rise of a manpower shortage in the city economy.

The history of building a garment mill in the town of Shelekhov (Irkutsk Oblast) shows how the time for reaching full production capacity can be delayed due to a manpower shortage. It was planned that it would be provided with personnel chiefly from free female labor resources. However, these were insufficient and it was difficult to attract a labor force from other towns as there was no housing. As a result, the enterprise which was put into operation in 1977 and should have been in normal production in 1979, was utilizing only 75 percent of the production capacity on 1 January 1983.

In the small and medium cities they frequently violate the principle of integrated development in locating new enterprises, that is, they do not coordinate the dates for completing the production- and nonproduction-end projects. This also leads to incomplete development of production capacity and low retaining of personnel. Thus, in the town of Artem (Primorskiy Kray), capital investments into the construction of the production facilities of a knitted underwear mill completed in 1980 were 100 percent used as of 1 June 1983 while the figure was only 31.5 percent for the nonproduction-end projects. The lack of housing and children's preschool institutions has cost a great deal as the staffing of the mill with industrial and production personnel is just 28 percent of the planned number and designed capacity has only been 34 percent reached. Due to the lack of personnel production capacity has not been promptly reached at the Shadrinsk Leather Goods Mill (Kurgan Oblast), the Berezovskiy Garment Mill (Sverdlovsk Oblast) and other enterprises.

What lies behind such discrepancies? Certainly there are interdepartmental commissions for the placement of industrial enterprises set up under the RSFSR Gosplan and in all the oblasts, krays and autonomous republics of the RSFSR. However, the ministries and departments, in settling the questions of locating enterprises, do not inform the interdepartmental commissions of this. In the feasibility studies and design specifications they do not always consider the structure of the necessary labor force by jobs and sex and do not sufficiently work out the questions of how the enterprises will meet the need for manual and white collar personnel, what vocational training they will be given and where. At times these questions are not taken up at all in the materials submitted for approval to the interdepartmental commissions.

The labor bodies should take a more active part in resolving the problem of the location of new enterprises on the republic's territory, regardless of their departmental affiliation. For this, it would be wise to involve the corresponding subdivisions of the RSFSR Goskomtrud in working out with the ministries and departments the questions on new construction together with the sectorial sections of the RSFSR Gosplan precisely at the initial stage. It is important without fail to consider the actual use of the production capacity already operating on these territories, the level of technical equipping and the possibility of reconstruction so that the need for locating new enterprises be completely studied. These questions should also be examined additionally in the designing stage, but even in greater detail, constantly considering the skilled manpower balances, the possible sources for covering the need for personnel as well as estimated expenditures for their training.

A method for resolving such problems has been sufficiently worked out but, unfortunately, arbitrary decisions are still frequently taken, departmental



interests prevail and the available labor resources and other social factors are not taken into account.

The RSFSR Goskomtrud sees its main mission in further improving the organization and in more active joint work with the ministries and the RSFSR Gosplan. It is completely untenable when the new enterprises established for a long period of time are unable to reach full production capacity.

Equally important is the raising of the question of what internal reserves one or another city possesses from the viewpoint of the composition of the already employed population and the transferring of specialists and workers released from existing enterprises to new plants, factories, to production associations and their affiliates as a result of the reconstruction of production, mechanization and automation and rationalization in the area of the organization of labor.

As is known, the enterprises of the small- and medium-sized cities, as a rule, are small ones. Their equipment, particularly in the sectors of ferrous and nonferrous metallurgy, machine building, the chemical and food industries, is often obsolete and worn out. For this reason, in building new production facilities consideration should be given without fail to reconstruction and the intensification of existing production whereby, naturally, a labor force will be released for new projects.

Checks made by the labor bodies have shown that at many enterprises located in the small- and medium-sized cities, the level of employing manual labor is dropping very slowly. Thus, at the Borovsk Worsted Mill, 41.5 percent of the workers is still engaged in manual labor, 65.6 percent at the Osinniki Brick Yard and 66 percent at the Shadrinsk Meat Combine. Of course, a certain portion of the workers at such enterprises are of prepension age and they cannot be viewed as a reserve to be transferred to new plants. However, often they do employ a number of young, energetic workers who have good training. For this reason, it is important to be concerned promptly for fully utilizing their possibilities. Here the effect is measured as both an economic gain and a social return, since interesting labor at a modern enterprise will provide a much greater benefit to both the nation and the people themselves.

Life and the interests of developing socialism require that in resolving the questions of the location of new industrial production, fuller consideration be given to the opportunities for using local labor resources at nearby enterprises, that is, where due to the mechanization and automation of production processes they plan to free career workers for establishing new labor collectives. For improving the work of the interdepartmental commissions, it is very important to organize the compiling of planned labor balances for the small- and medium-sized cities and to pay more attention to more carefully coordinating the sectorial and territorial plans for the location and development of industrial production, considering here, naturally, the possibilities for the movement of the population from adjacent rural areas.

For the normal flow of demographic processes, it is essential to improve the ratio between the number of men and women not only generally as an average for a city, among the entire population, but also among the workers since these are

persons of the most active age from the viewpoint of founding families and it is precisely in the small- and medium-sized cities that the conditions for founding families are bad. Thus, virtually one out of every five young men in the "male" cities and one out of every five young women in the "female" cities are deprived of a potential spouse. For this reason in analyzing the reasons for personnel turnover in such cities, one more often encounters such phrases as "change of residence due to family circumstances." We are far from having a negative view of such moves. Under the conditions of the dynamic development of the national economic complex, migration is completely essential but this should be migration within optimum limits and which to a certain degree can be controlled, shaping the migration flows in the necessary direction.

Among demographers at present a not completely scientific concept of an "incomplete city" has taken hold. Thus, according to data for 1982, this was the case of one out of every four of the small and medium cities of the republic. A majority of them (three-quarters) employs predominantly female labor, where the share of women is over 55.5 percent among the employees.

The RSFSR Goskomtrud, in being guided by the party and government decisions on the need to develop the economically prospective small- and medium-sized cities, pays constant attention to them, it works out and monitors the implementation of measures aimed at improving conditions for the reproduction of the population and through its local bodies assists actively in overcoming the discrepancies in the employment of male and female labor, particularly in small towns.

For facilitating the actual work of optimizing the employment structure by sex, the TsNILTR has prepared Methodological Recommendations on Studying and Controlling the Employment Structure by Sex. These make it possible not only to detect unevenness in the employment of male and female labor but more soundly select measures for eliminating this. In particular, they contain lists of types of production recommended for location in cities of varying functional types. Moreover, the labor bodies, on the basis of analyzing the state and utilization of the labor resources, periodically prepare lists of small cities where they recommend primarily the development of industrial production. Often precisely the labor bodies reject proposals by ministries and departments to locate industrial enterprises in various cities if this exacerbates the unevenness of the sex employment structure.

Thus, the labor section and the planning commission of the Vologda oblispolkom prepared proposals on the location of local industry enterprises which would employ males in towns with a predominance of female employees. These proposals were adopted. As a result of building brick and motor vehicle repair plants as well as locating shops and enterprises from certain other sectors in Totma, Gryazovets, Nikolsk and Ustyuzh, the sex employment structure has become normal.

As a whole, due to the work done since 1970 up to the present, definite positive changes have occurred in the economic structure and, as a consequence, in the sex employment structure in the small- and medium-sized cities. There has been a significant rise in the share of cities with the even utilization of male and female labor. In 1970, there were only 52.3 percent such cities and towns and in 1982, already 77 percent. The number of cities with a violation of normal proportions has declined by 2-fold. At the same time, the sex employment structure has deteriorated in certain cities.

Over the period between the population censuses (1970-1979), around 20 percent of the cities with an even sexual employment (in 1970) shifted into the group of cities with a disproportion in this regard. For example, over this time enterprises with a predominance of male labor were located in Gusinoozersk (Puryat ASSR). During the current five-year plan they intend to build another several such enterprises. Under these conditions immediate measures must be taken to surmount the arising disproportion. Where at present the ratio of men and women among the employed population is optimum, a violation of this must not be allowed.

An analysis made by the RSFSR Goskomtrud of the employment structure in the so-called incomplete cities during the 11th Five-Year Plan has shown that in approximately 56 percent of them they intend to locate enterprises which will even out the discrepancy in the employment of male and female labor. In this regard, it is essential to more profoundly study and propagandize the joint experience of the local labor bodies, the soviets and the representatives from the sectorial ministries to optimize the employment structure. The development of the social infrastructure in the small- and medium-sized cities will also be an important reserve. It is not merely a question that they have little available housing, cultural, service and children's preschool institutions for the population. The development of the infrastructure means, in particular, the establishing of such sectors as construction and the service sphere where the male and female working-age population can be evenly employed.

The small cities lack vocational-technical schools, technical schools or their affiliates. Such institutions of learning are lacking in approximately one out of every six small cities. Naturally the young people will travel to other cities and republics to learn. At present, more than two-fifths of the school graduates leave the small- and medium-sized cities for employment and education. In the so-called incomplete cities this indicator is significantly higher. In the cities with a predominance of female labor, it is around 70 percent. While over 90 percent of the questioned tenth graders intend to leave Artemovsk and Tyrnauz after completing school, this is actually a direct signal to the local labor bodies to more profoundly study the organization of vocational guidance and to be concerned for the return of the young people to their home towns after education.

It would be advisable to regularly prepare special information lists on the vacant jobs existing in a city ("For You, Young Man" and "For You, Young Woman"), in the schools to make it a practice of holding "vocational guidance months" and organize city-wide lecture series on "What Will You Become?" At the interschool training-production centers it is important to provide job training for the senior graders for precisely those professions which are in shortest supply in the city and on their basis organize city offices for youth vocational guidance. In vocational guidance work the parents must not be forgotten as they have a substantial influence on the choice of a profession by their children. It is also wise to use the mass information media, parent lecture series, the extensive celebrating of worker dynasties and so forth.

Increased activities by the youth job placement commissions can also be of definite help in retaining the young people. At present, these commissions in the small- and medium-sized cities, as a rule, handle only those school graduates

who intend to be hired in the given city. At the same time, many justify their departure from the city by a lack of suitable work and overlook, as a rule, the job placement commission where in many instances they could be offered a job which conforms to abilities and inclinations and not generally so but rather specific variations of job placement at city enterprises. In this context the youth job placement commissions should organize colloquiums for all 10th graders and hold them ahead of time, no later than March-April. This work should be improved considering the demands set out in the Decree of the April (1984) Plenum of the CPSU Central Committee "On Basic Areas for Reforming the General Educational and Vocational School."

We would like to emphasize that the above-listed forms are already being successfully employed in practice. This experience must be disseminated and reinforced everywhere.

The establishing of conditions which provide an optimum employment structure for the population will assist in increasing the effective use of the labor resources, the proper occurrence of sociodemographic processes in the small- and medium-sized cities and a further rise in the roll of this category of urban settlements in the nation's national economic and cultural life.

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## LABOR

### EXPERIMENT SEEKS BETTER LABOR, WAGE MANAGEMENT

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[Article by Candidates of Economic Sciences N. Amonskiy and I. Batukhtin: "Incentives, Searches, Effectiveness (An Experiment to Improve the Organization of Labor and Wages)"]

[Text] For improving work in the area of developing and introducing new highly effective equipment and progressive production methods, in being one of the basic conditions for accelerating scientific and technical progress, of major importance is an improvement in the material incentives of the production engineers and designers who develop the new equipment and the providing of a closer tie between the quantity and quality of their labor and its remuneration.

The presently used methods of material incentives for engineers and technicians do not always make it possible to consider the quality and particularly the complexity of their work. In practice, a better quality of engineer work is encouraged chiefly by a rise in the salary of the workers as they advance on the job. A promotion is an important incentive for improving the quality and productivity of a specialist's labor. However, this does not help to resolve a number of serious problems concerning increased effectiveness of the work done by engineers and technicians. Two specialists of equal skill holding the same positions can have a different attitude toward the work but no consideration is given to this in their material incentives. Moreover, certain specialists who are transferred as an incentive to management positions with a higher salary do not always possess the necessary organizational abilities and as a result do not fully carry out the new functions entrusted to them while they cease to be used directly as specialists. Precisely due to the shortcomings in the organization of wages and the material incentive systems at present in the design and production services there is a multiplicity of small structural subdivisions, senior engineers and production engineers and designers of the first category, while there is a lack of technicians and regular engineers, production engineers and designers.

Material incentives for engineers and technicians paid according to the results of economic activities under the existing provisions are determined proportionately to salaries. At first glance, such a distribution of incentive funds corresponds to equal wages for equal labor, since the salaries should be set in accord with worker skills. But, as practice shows, the specialists who have

equal salaries often make a different labor contribution to the end result of the work. For precisely this reason many economic leaders have rightly voiced the opinion of the need to strengthen the dependence of wages and material incentives for each production engineer and designer on his personal labor contribution and thereby increase the prestige of the profession of a production engineer and designer.

The given question has been repeatedly examined at the Leningrad party obkom with the party and economic leaders from the major production and scientific-production associations and scientific institutions. Since July 1983, upon the initiative of the oblast party committee, an experiment has been carried out to improve the organization of labor and wages for designers and production engineers at five Leningrad associations: Izhorskiy Plant imeni A. A. Zhdanov, the Leningrad Metals Plant imeni XXII S"yezd KPSS, Elektrosila imeni S. M. Kirov, the Leningrad Electrical Equipment Plant imeni 60-letiyе SSSR and the Nevskiy Plant imeni V. I. Lenin.

The aim of the experiment has been to increase the responsibility of the designers and production engineers in the organizations and subdivisions of the production associations for the technical level and quality of developments; there is also the aim of establishing a material incentive to carry out a larger amount of work with a smaller number of workers.

In accord with the set goal, each association involved in the experiment has set specific tasks the carrying out of which should provide the following:

- 1) Ensure rapid development and introduction into the national economy of the new highly effective equipment and production methods and shorten the length of the "research--production" cycle for the major problems;
- 2) Bringing the basic parameters of the new equipment and production methods being developed up to a level of the world standards and increasing the share of superior quality product in the total production volume;
- 3) Reducing labor intensiveness in manufacturing the new equipment in comparison with the established indicators and increasing its effectiveness;
- 4) The growth of labor productivity of the designers and production engineers and reducing the number of workers in the research, design and production engineering subdivisions.

The essence of the experiment is that the organizations and subdivisions participating in it are given a fixed wage fund for the entire period of conducting the experiment, proceeding from the number of workers in the designated organizations and subdivisions on 1 January 1983. The designated fund includes the total amount of actual salaries for the workers and the previously established surpayments. Here the quota approved by the ministry for the association to increase labor productivity (in NChP [normed net product]) should not be changed with the releasing of the number of workers as a result of conducting the experiment. The quotas for reducing the number of employees for the subdivisions participating in the experiment are not to be determined while the quotas for reducing the number of managerial personnel of the associations and



the expenditures on their support are set not counting the number of employees in the subdivisions where the experiment is being carried out.

The production associations are given the right to do the following:

- 1) Within the approved wage funds to set the salaries for the engineers and production engineers of the first, second and third categories on a level of the salaries for the design engineers of the corresponding categories;
- 2) To approve staff schedules for the design and production organizations and subdivisions as well as the salaries of the engineers and technicians from these organizations and subdivisions and here the average salaries may not correspond to those which have been set in the salary systems and the ratio of the number of individual employee categories can be changed;
- 3) Within the wage fund surpayments on the salaries can be set for designers, production engineers, leading senior engineers and engineers directly engaged in working out and introducing new highly efficient equipment and production methods. The designated surpayments are set by the leaders of the organizations and subdivisions with the approval of the general director and for the subdivision leaders by the general director as well.

The amount of the surpayment is virtually unlimited and is set depending upon the personal contribution of the worker to developing highly efficient equipment and production methods. The associations have also been granted other rights in the area of material incentives, employee certification and other questions.

It was decided to conduct the experiment at all the associations on the basis of a uniform procedural approach, as otherwise it would be impossible to obtain and evaluate the intermediate results of the experiment for forecasting the possible end results in the aim of using them in including new enterprises in the experiment. For working out the procedural questions for conducting the experiment, the Council for Economic and Social Development Under the Leningrad CPSU Obkom, a procedural group was established which included highly skilled specialists and scientists. Such an approach proved effective and all the acquired experience is now being used at the enterprises which began to carry out the experiment.

In the associations they have set up coordinating councils and work groups from specialists of the economic, production and design services.

From the recommendations of the procedural group, in all the associations that have worked out integrated programs for carrying out the experiment and these provide the following:

- 1) An improved structure of the research, design and production organizations and subdivisions, a change in the staffs, the broad use of combined professions and positions, the establishing of new salaries and surpayments for them, and improved incentives for the labor of the designers and production engineers;

- 2) The development of cost accounting in the subdivisions operating under the conditions of the experiment;
- 3) The elaboration and application of norms for planning scientific research and design work and assessing the quantity and quality of executor labor;
- 4) The certifying of the workers, the freeing of workers and their job placement in accord with the provisions of labor legislation;
- 5) Increasing the technical equipping of engineer labor;
- 6) Assessing the effectiveness of the organizational and technical measures which ensure the carrying out of the experiment.

A major stage in the preparatory work was the certifying of engineers and technicians participating in the experiment. Some 96 percent of the total number of employees to be certified was certified. As a result of certification and the improved structure of the subdivisions, by 1 April 1984, 1,002 staff units had been freed or 11.2 percent of the total number of subdivision workers.

In actual terms the number of workers declined by 752 persons or by 8.4 percent. Out of the total number of released workers, 17.6 percent retired on pensions, 39.9 were transferred to other subdivisions and 42.5 percent were dismissed from the associations. The highest number of releases was achieved in the following associations: Izhorskiy Plant imeni A. A. Zhdanov (14.8 percent of the total number), Leningrad Metals Plant (11.1 percent) and Nevskiy Plant (13.2 percent).

In the associations new provisions and criteria were worked out for assessing the work of each co-worker. Thus, at Elektrosila imeni S. M. Kirov, a point method was introduced for evaluation using a total coefficient of labor effectiveness for each experiment participant. As a result of certification, 41 persons were judged not meeting the position held and over 800 proposals and comments were made to the persons being certified.

At the Nevskiy Plant imeni V. I. Lenin, some 558 persons were to be certified. The actual figure was 555 workers. In the course of certification, 503 proposals were made to improve work, to increase skills and responsibility for carrying out the production quotas, including 45 directed to the administration and 458 to the persons being certified.

A general shortcoming in the certification work was the fact that it was carried out only in the aim of disclosing the matching of the workers to the positions held. Its results were not correlated subsequently with the amounts of the salary surpayments set for the workers and this reduced its effectiveness.

For increasing the results of certification, it obviously would have been advisable to permit the associations to carry it out annually for the engineers and technicians. Early certification could be designated when necessary.

There is a widespread opinion that the labor of designers, production engineers and engineers and technicians generally cannot be judged with sufficient accuracy due to its broad range, specific features and unpredictability both of the

results themselves and the times of obtaining them. One can scarcely agree with such an opinion. Obviously it is entirely a matter that little attention has been given to the questions of norming engineer labor.

In the associations participating in the experiment, primary importance is given to norming the labor of the designers and production engineers. Consolidated and differentiated labor intensiveness norms have been worked out and these make it possible to improve labor planning and norming in the subdivisions. Thus, at the Izhorskiy Plant they have normed around 80 percent of the entire volume of work, the Leningrad Metals Plant some 79.6 and Elektrosila 70 percent. All the associations are working out norms for research work.

At the Leningrad Electrical Equipment Plant, responsibility for working out and maintaining the engineer labor time standards on the proper level has been entrusted to the norm-research bureaus and the section for the organization of labor and wages. All the co-workers of the norm-research bureau have been assigned to subdivisions in the aim of providing them help in norming the quotas.

Time standards are employed in setting the amount of work and evaluating the labor intensity of each worker and on the basis of this evaluation salary surpayments are set for the performing of additional work.

At the Izhorskiy Plant, they use 16 types of labor intensiveness norms for design and production work, including 4 which are intersectorial and sectorial norms. For monitoring the progressiveness of the norm materials and the actual labor expenditures of the workers in fulfilling the production quotas, the association has worked out a monthly report form on the fulfillment of production quotas. The report is filled out by each structural subdivision. The report indicators are analyzed and on the basis of this measures are worked out to improve the normative materials. Supervision of the actual labor expenditures of the executors in fulfilling the individual normed quotas is carried out directly by the leaders of the bureau and sector.

Measures are being taken to improve the activities of the design and production subdivisions on the basis of employing elements of cost accounting. For these subdivisions they plan the subject of the work, the volume of work (in rubles and norm-hours), the number of workers and wage fund, financing sources, indicators for the scientific-technical level and effectiveness of the developments and a reduction in labor and material intensiveness.

The degree of utilizing cost accounting and the indicators planned in the associations vary. Thus, at the Leningrad Electrical Equipment Plant, for coordinating the cost accounting indicators of the subdivisions with the indicators for the end results of the work, they have introduced the following evaluation indicators:

- 1) The duration of the work performed (a reduction in the time of the work from 5 to 10 percent in the current year);
- 2) The quality of the work (a level of standardization from 70 to 85 percent in the articles and reliability from 2,000 hours to 3,000 hours);

3) A coefficient for the degree of newness (differentiated depending upon the receiving of a certificate of invention, a patent or a licence).

At the Leningrad Metals Plant, planning and assessing the results of economic production activities at the design and production subdivisions (sections) are carried out for the following basic indicators:

- 1) The volume and range of work in thousand rubles and norm-hours according to the established norms;
- 2) Labor indicators such as the increase in labor productivity, the number of workers, the wage norm calculated per planning-accounting unit of the amount of work;
- 3) The financing of the work, including by sources;
- 4) Indicators of production efficiency including the total amount of the economic effect from carrying out scientific and technical measures, including the economic effect obtained by the client, the economic effect in the association from reducing products costs by lowering the labor intensiveness of the product and reducing material intensiveness of production.

At the Nevskiy Plant, significant measures are being carried out to improve the planning of design-research and production work for the subdivisions and to monitor their fulfillment. Temporary instructions have been worked out determining the procedure for compiling and approving the work plans for the sectorial integrated subject and for economic contract jobs. The subdivisions are given directive and calculated work indicators. The directive indicators are: the total volume, the basic range, the time for performing the work; the wage fund, the limit on the number of workers, the limit on monetary outlays (for business trips, paying for consultation and so forth); the total savings in production from introducing the developments, including the reduction in labor and material intensiveness; the material incentive fund including for current bonuses, for material incentives for the winners of the socialist competition and for providing material aid. The calculation indicators are product output per average listed worker, monthly wages of one worker, the number of articles manufactured by the association according to the section's plans and having surcharges on the wholesale prices for high effectiveness and the state Emblem of Quality, and the savings from reducing material intensiveness for the basic product types (in percentages and rubles).

In the work of introducing cost accounting there also are shortcomings. In particular, the cost accounting indicators should be issued not only to the sections but also to each sector and bureau.

Great and important work has been done at the associations to improve the structure of the designs and production subdivisions. Thus, of the 118 structural subdivisions where the experiment has been carried out, 2 sections, 8 laboratories and 9 bureaus were eliminated, 18 sectors were reorganized and 2 subdivisions were abolished. These changes were aimed at bringing the composition of the research and design-production subdivisions into fullest accord with the area of their subject plans and quotas. Extensive work was also done to improve



the internal structure of the subdivisions. Thus, at the Izhorskiy Plant, for increasing effectiveness in resolving questions related to the long-range development of metallurgical production, instead of the sections for long-range development, production preparation and designing they established a section for long-range development of metallurgical production and a production-design section for the preparation of production. In one of the laboratories, two divisions and one bureau were cut back. The staff schedules of all the subdivisions were analyzed in accord with the norms and reduced. As a result of the work done in all 19 subdivisions, 153 positions were released, including 63 vacant ones.

At Elektrosila, chief designers have been appointed for product types and for each independent design project leading production engineers have been assigned. This has created the prerequisites for reducing the development time and for eliminating parallelism in the work of the designers and production engineers. By improving the management structure, one section, two bureaus and two sectors in sections were cut back.

At the associations they have begun introducing the brigade forms for organizing labor. Start-to-finish integrated brigades have been set up for solving major production design problems. Thus, at Elektrosila they have set up an integrated brigade of specialists from six sections to work out and introduce a system for the automated designing of medium-power electrical machines.

At the Leningrad Electrical Equipment Plant, two integrated brigades have been established. One of these consisting of 16 persons was organized from specialists from the All-Union Scientific Research Design Institute for Numerical Program Control System. The brigade should put into series production the 2r32 numerical program control device, help to produce and turn over the head batch of articles to the OTK [technical inspection section], conduct standard testing and train shop specialists and carry out coordinating work for the product and range testing. The members of the brigade in 3 months have been given salary surpayments amounting to from 40 to 100 rubles a month. The quota set for the brigade has been successfully fulfilled.

Positive changes in the activities of the design and production organizations and subdivisions involved in conducting the experiment are also occurring as a consequence of reorganizing the system of planning and using the funds allocated for wages. The rights of the leaders of sections, laboratories, bureaus and sectors have been significantly broadened in using the wage fund and in setting salary surpayments and bonuses for the workers. The total amount of savings in the wage fund over the 9 months of the experiment was 1,475,800 rubles or 12.2 percent of the wage fund for the organizations and subdivisions participating in it. More than 50 percent of this savings was obtained by reducing the number of employees. From the savings in the wage fund, basically surpayments were set for the salaries of specialists for increasing the volume and reducing the time of carrying out the work and for high skills. More than three-fifths of the total amount of the employed funds went for these purposes. As a total during the experiment such surpayments were set (calculated per month) for 2,398 workers, or 29 percent of the total number of those participating in the experiment. The surpayments are set for a relatively short period of time (as a rule, for 1-3 months). The number and amount of these surpayments

are not constant and they change depending upon the tasks confronting the organization or subdivision at the given time. The minimum amount of surpayment is 20 rubles and the maximum is 195 rubles.

The surpayments are set depending upon the individual contribution of the workers to developing highly efficient equipment and production methods. The evaluation criteria for this contribution vary in the different associations and have been worked out considering the specific features of the enterprises.

Surpayments and additional payments to the salaries are set for carrying out the most crucial developments, for the early fulfillment of the work as well as for performing the duties of temporarily absent workers. The designating conditions and the procedure for paying the surpayments have been set. Thus, at the Izhorskiy Plant the surpayments are set with a reduction of at least 20 percent in the number of deviations from the essential parameters in the worked out plans (production method); in carrying out standardization quotas and approved schedules for start-to-finish flow sheets and production processes.

At the Leningrad Electrical Equipment Plant the surpayments are basically set before the start of carrying out the work. In setting the surpayments each worker promises to perform an additional amount of work and reduce the time for completing this. At the Leningrad Metals Plant, the surpayments are set by the subdivision leaders for those workers who have met the set quota in terms of time and quality. The surpayments are paid irregularly and are designated for the period of performing a certain amount of work.

High surpayments, as a rule, are set for the early completion of particularly important articles. Thus, at the Izhorskiy Plant they have set surpayments for the salaries for designers for the early development of the cab of the new EKG-15 excavator. The production of this type of excavator eliminates the necessity of purchasing excavators produced under license of U.S. firms in Japan for foreign exchange. In producing and utilizing the new excavator, there will be a significant reduction in the proportional capital and operating expenditures and the economic effect calculated per excavator should be 586,000 rubles. The work was completed on 15 November instead of December according to the plan. For the early completion of the work, the group chief was given a surpayment amounting to 160 rubles a month while the group co-workers received from 25 to 70 rubles a month.

The surpayments are eliminated in the same procedure as they are set. Thus, for an ineffective solution to technical problems related to manufacturing pipe assemblies in Shop No 16, in November 1983 the surpayments were eliminated for the workers of the bureau from a section of the main power machine building welder.

Surpayments are sometimes set for eliminating shortcomings in the organization of production but this does not conform fully to the tasks of the experiment.

In the aims of retaining and attracting highly skilled designers and production engineers to the enterprises, a portion of the wage fund savings is used also to give to individual workers maximum salaries provided for by the system and to pay salaries to production engineers on a level of the corresponding categories



of design engineers. Thus, at Elektrosila the salaries of 158 production engineers were increased, at Izhorskiy Plant for 38 and as a total in the five associations for 278 production engineers.

The new organization of bonuses has had a substantial impact on strengthening the interest and responsibility of the workers in the design and production services to improve all the basic indicators of their activities. The amount of a subdivision's bonus fund is set considering the fulfillment of the cost accounting indicators set for it. In contrast to the previous system, bonuses are paid in a varying percentage of salaries. The amounts are differentiated depending upon the personal contribution of each designer or production engineer to developing and introducing new, highly effective equipment and production methods. Submitted for bonuses are only those workers who have provided the high-quality and prompt fulfillment of the quotas set for them and an increased technical and economic level for the research and developments.

The personal contribution of the workers is determined with the aid of a labor participation coefficient (KTU), an evaluation of labor effectiveness by points (OEFT) and a labor quality coefficient (Kk). At all the associations the personal contribution is reckoned on specially worked out "Report Plan of Designer (Production Engineer)" cards and these contain the necessary information for evaluating the personal contribution.

The actual amount of the designated indicators for each executor in a subdivision is set on the basis of data from the daily or monthly figures which are provided by the leader. For the work results over a month or quarter, for each executor the average amount of these indicators is determined and this is then approved by the council of the inferior subdivision. The council includes: the chief of the bureau of sector and a trade union representative. With a disagreement of individual workers over the personal contribution indicators set for them, the given question is reviewed at a general meeting and its decision is final.

As a result of the use of the new procedure, there has been a change in the number and composition of workers receiving bonuses and the amounts of bonuses have become more differentiated. For example, over August 1983, in the subdivisions of the Izhorskiy Plant participating in the experiment, bonuses were received by only 1,196 persons, or 53 percent of the workers. Here 99 workers received increased bonuses. At Elektrosila, the amounts of bonuses paid to designers and production engineers over the third quarter of 1983 were set depending upon the amount of the KTU from 3 to 34 percent of the salary. At the Leningrad Electrical Equipment Plant, during the third quarter 80 persons were not submitted for bonuses.

The new wage system helps primarily in encouraging the most skilled specialists who make a crucial contribution to the development of new equipment and production methods as well as workers engaged in carrying out the most important developments. For this reason, with a significant rise in the earnings of individual specialists, the overall increase in the average monthly earnings in the design and production organizations and subdivisions operating under the new conditions has been relatively slight from 3 percent (Nevskiy Plant and Leningrad Metals Plant) to 11 percent (Izhorskiy Plant). As an average for the three associations of Minenergomash [Ministry of Power Machine Building], its growth

over the second half of 1983, in comparison with the corresponding period of 1982, was 5.2 percent with a rise of almost 13 percent over the same time in output per worker.

Average monthly earnings of workers in the design and production subdivisions participating in the conducted experiment in the first half of 1983 reached 188 rubles at Izhorskiy Plant and increased by almost 20 rubles in comparison with the second half of 1982; at the Nevskiy Plant the figures were 225 rubles and an increase of 6 rubles; the Leningrad Metals Plant 176 rubles and a rise of 5 rubles; Elektrosila 184 rubles and an increase of 14 rubles. At the Leningrad Electrical Equipment Plant, due to the reduction in the amount of bonuses over the third quarter of 1983, average monthly earnings declined by 12 rubles and were 185 rubles.

At the Izhorskiy Plant, Leningrad Electrical Equipment Plant and Leningrad Metals Plant, sociopsychological research is also being carried out. In the aim of determining the public opinion about the experiment and the attitude to it among the immediate participants, the Leningrad Metals Plant conducted the first research in August-September 1983 and the second in December. A polling of the experiment participants showed that the relative number of workers approving the experiment increased from 36.7 to 46.9 percent and there was a decline in the number of workers having no opinion on the experiment from 26.6 to 17.2 percent. There was a slight decline in the number of persons who disapproved of the experiment and this was 36 percent in comparison with 36.7 percent.

The research data make it possible to conclude that the experiment is gaining ever-greater recognition in all the associations. However, the presence of a significant number of workers who do not approve of it (basically these are workers not submitted for bonuses and not receiving surpayments) shows the need to intensify explanatory work in the subdivision collectives. Each participant in the experiment should understand its essence and realize that such a material incentive system is advantageous not only for the collective but for all its members.

An analysis and assessment of the first results of the experiment show that, regardless of the insignificant time which has passed since its start, noticeable positive results have been achieved in increasing the responsibility of the association services for working out and introducing new, highly efficient equipment and production methods, for increasing the prestige of engineer work and for improving the production indicators and the state of labor and production discipline.

At the Izhorskiy Plant, labor productivity in the subdivisions which converted to the experiment rose by 12.3 percent while the number of deviations in the production processes declined in the second half of 1983 by more than 2-fold in comparison with the first 6 months.

The experiment's conditions contribute to accelerating the resolution of important national economic tasks. Thus, at the Leningrad Electrical Equipment Plant, the design and production sections were given the task of significantly shortening the development time of a numerical program control device with an increase in the operating time to 2,000 hours in comparison with the 1,000

operating hours of the devices presently produced. Surpayments were set for the specialists in carrying out the given assignment. Intermediate supervision indicates that the assignment is ahead of schedule.

The increase rate in the amount of scientific research and design work according to the 1983 plan in this association should be 11 percent while in fact it was 12 percent greater with fewer workers in comparison with the limit number; labor productivity of the experiment participants increased by 9 percent. According to the estimates, the conducted experiment will make it possible to shorten the time of experimental design developments along with production preparation from 4 to 3 years while the time for carrying out the experimental design developments with the preparing of the production of modified articles will drop from 2 years to 1 year.

At the Leningrad Metals Plant, in one of the subdivisions a decision was taken to reduce the time for completing the designing of the GTE-150 gas turbine unit. For this purpose a brigade of the best qualified designers was set up and it set a date for completing the development in accord with the directive schedule. Each brigade member was given salary surpayments of from 50 to 100 rubles a month for a period of 2 months. This made it possible to mobilize the collective to successfully carry out the set task.

At Elektrosila, in the second half of 1983, in comparison with the corresponding period of 1982, the proportional amount of superior quality product in the total volume of certified product increased from 81.5 to 87.4 percent, and the decline in product labor intensiveness was 330,200 norm-hours in comparison with 300,200 norm-hours in 1982; the annual economic effect rose from 8.5 million rubles to 13 million rubles; the number of innovation proposals submitted by the experiment participants increased from 145 to 160; the production subdivisions during the experiment introduced new progressive methods for laying out metal and utilizing waste products and these provided an above-plan savings of 160 tons of metal.

In the production associations the psychological climate as well as the labor and executive discipline have improved. For example, at the Leningrad Electrical Equipment Plant, the number of sick leaves and unpaid leaves among the experiment participants declined by more than 30 percent.

Increased effectiveness in the work of the research and design-production subdivisions was achieved as a result of using a rather limited range of reserves, that is, a partial curtailment in the number of workers, insignificant structural changes, better planning of the work of the subdivisions and norming the labor of executors. There are still significant possibilities for further improving the work of the subdivisions by:

- 1) A profound reorganization of the subdivision structure including a transition to "flexible" structures and the setting up of scientific-production complexes, integrated and specialized brigades and subdivisions;
- 2) Improving working conditions for the designers and production engineers, equipping work areas with technical devices, and establishing the prerequisites for widely introducing automated work areas and automated designing systems;

3) Improving the system of drawing up and approving the technical specifications in the aim of simplifying these procedures and freeing the researchers, designers and production engineers from performing unskilled work.

The elaboration of measures aimed at realizing these reserves is a major task for the experiment participants in 1984-1985.

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## EDUCATION

### YELYUTIN, ASSOCIATE DISCUSS VOCATIONAL EDUCATION TARGETS

#### Yelyutin Urges Educational Improvement

Moscow SREDNEYE SPETSIAL'NOYE OBRAZOVANIYE in Russian No 7, Jul 84 pp 2-5

[Article by V. P. Yelyutin, minister of Higher and Secondary Specialized Education, USSR: "The Secondary Specialized School of a Developed Socialist Society"; on the occasion of the tenth anniversary of the publication of the CPSU Central Committee's decree on the secondary specialized school.

[Text] The building of a developed socialist society in our country opened a new stage in the activity of all elements of the system for popular education in the USSR. Along with the further expansion of its scales, tasks of a qualitative character are moved to the foreground which are connected with improving the preparation of the youth for life and labor under conditions of the economy's intensification, acceleration of scientific and technical progress, and a growth in the spiritual culture of the Soviet people.

The course of the Communist Party and the Soviet state toward intensifying the role of popular education in socio-economic and cultural construction found its consistent expression in the decree of the CPSU Central Committee and the USSR Council of Ministers of 22 August 1974, "On measures for further improvement in the direction of secondary specialized educational institutions and on improving the quality of the training of specialists with a secondary specialized education. This basic document, which consolidated the important place of technical schools and academies in the general system of popular education and which stressed their increased significance in the matter of training specialists for all branches of the national economy, has been directing the work of secondary specialized school collectives for 10 years already. This is why the specific results attained in the implementation of the decree during the period which has elapsed do not simply permit judging the successes and problems in their activity but also serve as the main standard for the contribution of secondary specialized education to the improvement of developed socialism.

In characterizing the results of the past decade, it is necessary to note first of all that it became a time of steady forward development of secondary specialized education in accordance with the tasks for the building of communism and the requirements for accelerating scientific and technical progress. During the years 1975-1983 the technical schools and academies gave the national economy 12.3 million specialists, and the annual output of middle element personnel increased from 1,157,000 to 1,266,000 people. Now 4,438 secondary specialized educational institutions are operating in the country as opposed to 4,286 at the start of the

1974 / 75 training year. More than 130 new technical schools and academies have been opened in regions of Siberia, the North, the Far East, and the Nechernozem [non-black soil] zone of the RSFSR. The successful accomplishment of the planned tasks for the output of specialists by the secondary specialized school permitted coming close to the accomplishment of a truly historic task--the task for the complete and steady satisfaction of the changing requirements of social production and the services sphere for middle echelon personnel.

The central place in the activity of the secondary specialized school is allotted to raising the quality of specialist training, improvement of the training process, and the organic combination of the instruction and indoctrination of the pupils with social practice. And the heat of the work being conducted in this direction is increasing from year to year. During the past period, more than 20 new specialties have been opened up in the technical schools and academies in the field of electronics, electrical instrument building and automation, radio engineering and communications, machine building, and agriculture. In the course of the review of training plans and programs the combined modernization of the entire content of secondary specialized education is ensured. This modernization is directed toward a significant rise in the level of general educational and professional training of personnel and an improvement in their practical instruction. Priority significance is attached to the future specialists' acquisition of firm knowledge, abilities, and skills in the field of operating new equipment and technology and their mastery of progressive means for the automation of production.

Much has been done to improve the Marxist-Leninist education and communist indoctrination of the pupils. The teaching of philosophy, economics, and sociopolitical courses has been expanded and the study of the principles of the Soviet state and law and a number of subjects in the humanities has been organized. The ideological-political and world-view content of the training and indoctrinational process has been enriched with new documents of the Communist Party and the Soviet state. Inestimable influence on the molding of the communist convictions of the future specialists is exerted by their study of the works and speeches of the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet, Comrade K. U. Chernenko.

Changes for the better occurred in the system and practice for managing secondary specialized educational institutions. Measures have been accomplished in concentrating the direction of technical schools and academies: more than 180 educational institutions have been removed from the subordination of local organs and transferred to ministries and departments of the USSR and the union republics. Improvement of the management of technical schools and academies was furthered by the creation of ministries of higher and secondary specialized education in Moldavia, Kirghizia, Turkmenia, and Tadzhikistan and the organization of 146 councils of principals of secondary specialized educational institutions. The role of interdepartmental bases, which was greatly furthered by the activity of the Council on Secondary Specialized Education, in the direction of technical schools and academies has been raised. Thanks to the creation of the State Inspectorate of Secondary Specialized Educational Institutions with the Ministry of Higher and Secondary Specialized Education of the USSR and republic inspectorates with the Ministries of Higher and Secondary Specialized Education of the union republics, such an important element of the management system as the monitoring and checking of execution has also been strengthened.

The planning of training and the distribution and use of specialists were improved. Specialization of the technical schools of USSR ministries and departments has been basically completed; unclassified specialties have been removed from approximately 500 educational institutions. Plans have been developed and are being implemented for the cooperative training of personnel in secondary specialized educational institutions of the union republics of Central Asia and the Baltic, the Ukraine, Belorussia, and Moldavia and of 24 ministries and departments of the USSR. New normative documents have been introduced in many branches of the national economy which ensure an increase in the soundness of estimates of current and prospective requirements for specialists and the improvement in their use. A noticeable favorable role in this matter is also played by the list of higher category worker professions which was approved by the USSR State Committee for Labor and Social Problems and which require a secondary specialized education. Tasks in the development of special-purpose training of personnel on the basis of the direct ties of technical schools and academies with big enterprises and organizations are being accomplished more and more energetically.

The training-methods and material-technical base of the secondary specialized school has been strengthened. Each year more than 400 titles of textbooks and training aids with a printing of more than 11 million copies are published for the pupils of technical schools and academies. But today the future specialists master knowledge not only from books--more and more effective technical means of instruction are becoming the reliable assistants of the teachers: television training systems, devices for the programmed checking of knowledge, and automated teaching complexes based on computers. The Ministries of Higher and Secondary Specialized Education of the Belorussian and Lithuanian SSR's have created training-production associations on the basis of shops of educational institutions within their jurisdiction which produce laboratory equipment, visual aids, and various training equipment. Some favorable shifts have occurred in providing the secondary specialized school with training and dwelling space: the total area of buildings of the technical school and school increased from 16 million square meters in 1974 to 21 million in 1983, and the number of places in the boarding houses--from 1,023,400 to 1,187,700.

Improving the qualitative composition of the teacher personnel steps forth as the main question for all work in implementing the decree of the CPSU Central Committee and the USSR Council of Ministers concerning secondary specialized education. Measures which have been adopted in this field permitted providing the technical schools and schools virtually completely with teachers having a higher education. Among 300,000 teachers of secondary specialized educational institutions more than 80 percent have been engaged in teaching work for five years or more, and many have acquired a secondary pedagogical or political education. A large step forward has been taken in the development of the system for raising teachers' qualifications: it now combines 104 faculties with the higher educational institutions as opposed to 67 in 1974. The probationary work of teachers at advanced enterprises and in organization and instruction in branch centers for postgraduate education are widely used to supplement and update knowledge. The raising of the qualifications of technical school and academy principals at two-week seminar-conferences conducted by the USSR Ministry of Higher and Secondary Specialized Education has been organized. The introduction of periodic certification of these personnel furthered the



strengthening of an environment of high mutual demandingness and of the responsibility of teachers and supervisory personnel for the level of instruction and indoctrination of specialists in the collectives of the technical schools and academies.

The significant successes attained during the past period on certain sectors of development of secondary specialized education is the result of the increased concern for technical schools and academies on the part of party, Soviet, and economic organs. The Communist Party central committees of the union republics, and party kray and oblast committees are devoting constant attention to the secondary specialized school. They improved the direction of primary party organizations of educational institutions, intensified monitoring of the selection and assignment of personnel, and increased the responsibility of teacher collectives for the teaching of social disciplines and the ideological-indoctrinational work among the pupils.

However, the favorable results of what has been done should not overshadow unresolved problems and difficulties, and the main thing--the new and important tasks posed for the secondary specialized school by the contemporary stage of social development. We are discussing the fact that today and in the future realization of the directives of the party and the government concerning secondary specialized education should be organically combined with the practical implementation of a broad complex of measures which follow from the decisions of the April (1984) plenum of the CPSU Central Committee and the first session of the USSR Supreme Soviet, 11th convocation, and with reforms of the general educational and vocational school.

Great and important work is to be done. Together with all stages of our school, the secondary specialized educational institutions should move forward significantly in the matter of raising the level of instruction and indoctrination of the youth. It is necessary to complete work on bringing the general-educational training of the pupils closer to the common content of general secondary education in the country, improve the forms and methods of instruction, and achieve the decisive intensification of the training process. The essence of the matter is to raise the quality of secondary specialized education to a fundamentally new height. Additional opportunities for this are being created by an increase in the salaries for popular education personnel which is called upon to further the making of their pedagogical activity more active and creative and ideological-political growth.

The strategic reference point for school reform, the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet, Comrade K. U. Chernenko, points out, is the molding of a comprehensively developed personality. Subordinating its activity to this lofty goal, secondary specialized education is called upon to ensure further improvement in the professional training of personnel. You see, the April plenum of the CPSU Central Committee placed the economic and personnel return from reform on a par with the upbringing of the new Soviet man, for realization of our humanistic ideals should be based on a firm economic and scientific-technical foundation, no small role in the creation of which belongs to the secondary specialized school.



We stress: secondary specialized education has a unique and exceptionally important place in the accomplishment of the cardinal task of our time--the task of combining the advantages of the socialist management system with the achievements of the scientific and technical revolution. If the rates of scientific and technical progress depend on the higher educational institutions to a great extent, the technical schools no less actively influence its scales, depth, and economic results. In other words, without the secondary specialized school we cannot ensure the transformation of what is advanced and unique into what has a mass and daily nature, for it is precisely its alumni who determine the work style in the primary elements of the national economy and it is precisely their fruitful professional activity which creates the decisive preconditions for the genuinely broad and rapid mastery of progressive equipment and technology.

In this light, it is difficult to overestimate the significance of a secondary specialized education in the technological revolution now taking place in the leading branches of the national economy. Meanwhile, even today it frequently is not considered that, for example, the transition from the conveyor to flexible automated production works is, at the same time, also a transition to a new system for the division of labor where coming to replace the deep specialization of the workers at comparatively simple and repetitive operations are aggregated types of labor activity which are connected with the servicing of qualitatively new types of highly-productive equipment: machine tools of the processing-center type, technical robot complexes, varied microelectronics, and so forth.

The technological revolution of the contemporary period is determining the qualitatively new requirements in the training of personnel which can and should be satisfied by the secondary specialized school which should be in step with the changing requirements of the time. They dictate the necessity for the further restructuring of the content of specialist education which is directed toward the molding, in them, of a new type of technological and economic thinking and comprehensive practical abilities and skills. From them also follow the most essential features of an approach to giving a polytechnical aspect to the training of personnel which is inherent in the secondary specialized school and the main directions in the strengthening of the training process' connection with production. Finally, from this also follow new, higher requirements for the qualifications of technical school teachers, especially of teachers of special disciplines who must constantly supplement their knowledge in the area of the urgent problems to realize contemporary scientific and technical policy in their branch of the national economy.

The primary duty of the secondary specialized school is constant concern for the communist indoctrination of specialists. In the future, too, there should be purposeful enrichment of the training and indoctrinational process with timely socio-political information and the increasing of its world-outlook content. But main reliance should be placed on the effectiveness of indoctrination--on the ideological, moral, and labor qualities of the specialists. Special significance should be attached to the effective organization of aggressive propaganda and counterpropaganda in the collectives of the educational institutions and to the skillful and daily struggle with views and morals which are foreign to socialism.

We rightly expect a more substantial contribution to the communist indoctrination of specialists from the Komsomol of the secondary specialized school which is

called upon to free itself from elements of overorganization and showiness in mass-political work and to raise its activity to the level of the increased requirements of the party. The provisions of the speech by Comrade K. U. Chernenko at the Army-Wide Conference of Secretaries of Komsomol Organizations should serve as a specific guide to action here.

The new tasks of secondary specialized education require an improvement in the system and practice of operating educational institutions. It is no secret, however, that the decisions of the party and the government which were adopted earlier on these questions are far from implemented. Up to now the technical schools and academies remain subordinate to more than 200 ministries and departments, and in the Russian Federation and the Ukraine a considerable number of educational institutions are operated by local organs.

Such a situation creates obstacles in the path of realizing a single state policy in the field of secondary specialized education, and it should be corrected. Along with the further concentration of educational institutions in the ministries and departments of the USSR and Ministries of Higher and Secondary Specialized Education of the union republics, the efficient distribution of technical schools and academies is to be ensured, bringing them closer to the places of the youths' residence and of the future specialists' work. The role of the Soviet of People's Deputies in the operation of the secondary specialized school should grow, which will be furthered by the creation of interdepartmental commissions on popular education in the center and locally.

Interbranch and state bases in the development of the secondary specialized school should be organically combined with branch bases and with attentive consideration of the special features of scientific-technical and personnel policy which are typical for specific spheres of public production. Such a combination is persistently sought in the USSR Ministries of the Chemical Industry and Ferrous Metallurgy and the Electronics and Light Industries. The successes of the educational institutions of these ministries in improving the quality of specialist training and the development of the material and technical base are also present. But the display of a consumer's attitude toward the secondary specialized school and instances of the inefficient use of its graduates are noted in individual branches of the national economy. The accomplishment of planned tasks in the construction of facilities for secondary specialized educational institutions is disrupted from year to year and far from everything possible is done for their technical reequipping and the improvement of working and living conditions for the pupils and teachers. The reform of the school obliges the administrative organs and leaders of enterprises and organizations to change their attitude toward the urgent problems of the development of technical schools and academies, to increase assistance to the educational institutions, and to make patronage work more active.

The secondary specialized school has accumulated vast pedagogical experience. However, its study and propagation leave much to be desired. Scientists of the Scientific Research Institute on Problems of the Higher School and scientific institutions of the USSR Academy of Pedagogical Sciences are greatly indebted to the teachers of the technical schools and academies. Many methodological subsections of union republic Ministries of Higher and Secondary Specialized Education and of branch ministries and departments are working below their capabilities and require the ordering of their structure and function. All these and other

problems must be solved more energetically and purposefully, taking a truly collective step forward in the center and locally and ensuring the coordinated work of the management apparatus, educational institutions, and scientific and methodological institutions.

The key thing here is and will be the steady realization of the directives of the party and the government concerning the secondary specialized school. In order to ensure the execution of what has been planned in fact, it is necessary to increase demandingness toward personnel for the undeviating observance of state, planning, and labor discipline and to ensure the strict demand for the state of affairs on the work sectors entrusted to them. And this means that in the future, too, the effectiveness of monitoring should be raised and its organizational role should be strengthened in the creation of an environment of high mutual responsibility and creative search and intolerance toward any violations of legality and morals in the collectives of the secondary specialized educational institutions.

Entering the 1984/85 training year, it is necessary to check in all elements of the secondary specialized school the execution of previously adopted decisions and to analyze deeply and thoroughly the course of implementation of the directives by the 26th Party Congress and the decree of the CPSU Central Committee and the USSR Council of Ministers, "On measures for the further improvement of the leadership of secondary specialized educational institutions and on improving the quality of training of specialists with a secondary specialized education," to sum up what has been attained, and to compare it with new requirements for the activity of the technical schools and academies which follow from the documents of the April (1984) plenum of the CPSU Central Committee and the program provisions and conclusions on questions of popular education contained in the speech of Comrade K. U. Chernenko at the plenum. On the basis of such an analysis, it is necessary to determine a specific program of work for secondary specialized educational institutions at the concluding stage of the current five-year plan. The task consists of achieving specific practical results already in the new training year in the development of secondary specialized education which is combined with the reform of the school, ensuring an increase in its contribution to socio-economic and scientific-technical progress and the strengthening of the country's defensive capability, and initiating in the collectives of educational institutions a mass movement for preparation for a worthy greeting for the 27th CPSU Congress.

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#### Shipunov Discusses Reform Plans

Moscow SREDNEYE SPETSIAL'NOYE OBRAZOVANIYE in Russian No 8, Aug 84 pp 2-9

[Article by V. G. Shipunov, chief of Training Methods Administration for Secondary Specialized Education, Ministry of Higher and Secondary Specialized Education, USSR: "School Reforms and Tasks of Secondary Specialized Education"]

[Text] The most important task of the secondary specialized school and of leaders and all personnel of technical schools and academies is to bring to the mind and heart of each pupil the essence and significance of the decisions and materials of the April (1984) plenum of the CPSU Central Committee and the first session of the USSR Supreme Soviet, new convocation.



The documents of the plenum and session and the speeches of the General Secretary of the CPSU Central Committee, Comrade K. U. Chernenko, provide the aims as regards the main questions of the socio-economic policy of the party and the state, disclose ways for the further improvement of socialist democracy, and define the basic directions in the development of popular education.

Just as all Soviet people, engineer and teacher personnel and pupils as well as workers and employees of the secondary specialized school received the decisions of the plenum and the session with unanimous approval.

The materials of the April plenum of the CPSU Central Committee provide a new thrust to that national creative work, the main directions of which were defined by the 26th CPSU Congress. The plenum stressed with new force the role and responsibility of the popular education system in the accomplishment of national-economic and social tasks. "Reform creates conditions for the joint development of the entire popular education system," said Comrade K. U. Chernenko. "Including, of course, the higher school which substantially influences the rates of our economic, social, and spiritual progress and the country's defensive capability. It is precisely here that the human preconditions are created for what is our primary concern--the organic combination of the socialist management system with the latest achievements of the scientific and technical revolution."

The secondary specialized school is the most important element in the overall popular education system. The system for training specialists with a secondary specialized education which has developed during the years of Soviet power is successfully accomplishing the task of training the youth for work in various branches of the national economy of the USSR and making a substantial contribution to the accomplishment of the youth's general education. Its development, especially in recent years, is characterized by ever increasing scales. If in the 7th Five-Year Plan the output from the secondary specialized educational institutions was 2.6 million people, in the 8th it was 4.5 million, in the 9th--5.6 million, and in the 10th--6.1 million. About 6.4 million will be trained in the 11th Five-Year Plan. Altogether 28.9 million specialists have been trained during the period from 1918 through 1982, of which 17.9 million received a complete secondary education together with a specialty.

The network of secondary specialized educational institutions constantly expanded. By 1983 it numbered 4,418 educational institutions including, by branches: industry and construction--1,486 educational institutions (33.6 percent), agriculture--673 (15.4 percent), public health, physical culture, and sport--658 (14.9 percent), education--598 (13.5 percent), economics and law--391 (8.8 percent), art and cinematography--357 (8.0 percent), and transportation and communications--255 (5.8 percent). Secondary specialized education developed at high rates in the Uzbek, Kazakh, Kirghiz, Moldavian, Tadzhik, Armenian, and Turkmen union republics and in the rayons of Siberia and the Far East.

Development of the system of secondary specialized education expanded significantly the possibilities for obtaining an education by representatives of various social strata and groups. Now the contingent of pupils of the secondary specialized educational institutions is 4,517,700 people, including 2,844,400 (63 percent) who are being trained in accordance with the daytime form, 463,300 (10.2 percent)--the evening form, and 1,210,000 (26.8 percent)--in accordance with the correspondence form.



In recent years, the proportion of the youth which has come to the technical school and academy after completing the 10th grade of the secondary school has constantly increased. By 1982 it increased to 65 percent (the total for all types of instruction). The share of tenth-graders for the daytime form of instruction is about 50 percent, for the evening form--more than 96 percent, and for the correspondence form--93 percent.

The operating structure for training specialists of the middle element as a whole corresponds to the main trends in the development of public production. The list of specialties includes more than 500 directions which are combined into 21 groups on a branch basis. During the last 10 years the training of specialists has been organized in 27 directions for the development of equipment and technology. Thus, a firm foundation has been laid for the accomplishment of the new and important tasks put forth in the documents of the party and the government in the field of secondary specialized education.

The structure of general secondary and vocational education presented in the Basic Directions of Reform ensures the accomplishment of the qualitatively new tasks posed for the Soviet school by the June (1983) plenum of the CPSU Central Committee. "An important role in training the youth," it is noted in the Basic Directions of Reform, "belongs to the secondary specialized educational institutions (technical schools, pedagogical and medical academies, and others). They are training qualified specialists and organizers of the primary elements of production, education, public health, culture, and the services sphere, replenishing the ranks of the most numerous detachment of specialists of the national economy, and simultaneously participating in the accomplishment of the tasks of universal secondary education. In the future, too, it is necessary to raise the quality of training of specialists with a secondary specialized education who are needed by the national economy.

This high evaluation of the secondary specialized school's activity obliges the personnel of the technical schools and academies and the administration organs to also develop it in the future as a system of educational institutions which has developed historically and fully justified itself and in which the general secondary and specialized vocational education of the youth are combined most successfully and organically.

In the last training year the majority of the secondary specialized educational institutions changed over to work in accordance with new training plans. Completion of the review of training plans for daytime, evening, and correspondence instruction--this great creative work of the USSR Ministry of Higher and Secondary Specialized Education and branch ministries and departments--has simultaneously become the start of the main work of all personnel of the secondary specialized school on the consistent implementation of the measures envisioned by the reform which are directed toward raising the quality of education and communist indoctrination, the cardinal improvement of the labor training and professional orientation of the pupils, and the development, in the youth, of lofty moral qualities, a love for the motherland, and a readiness for its defense. These goals should be served by the improvement of all forms and methods of the training process, the social and family upbringing of the student youth, accustoming them more actively to knowledge and instilling skills in them for participation in socially useful work, and improvement of the control of secondary specialized education and the strengthening of the training-material base of technical schools and academies.

Remaining among the most important tasks facing the ministries and departments under whose jurisdiction the secondary specialized educational institutions are found and facing the pedagogical collectives of the technical schools and academies and their social organizations is the task for the further rise in the quality of the training and indoctrinational process: to give their pupils profound and firm knowledge of scientific principles, generate the skills and ability to employ them in practice, and to mold a materialistic world outlook. Training plans, programs, textbooks, and visual training aids are to be brought into conformance with the requirements of the socio-economic and scientific and technical progress and the age features of the pupils.

Reform stressed with special force the urgency of a radical improvement in the organization of labor indoctrination and the instruction and professional orientation of the student youth and the necessity to ensure a higher level of instruction for each subject and the elimination of the pupils' overload. It is also important to intensify the pupils' responsibility for the quality of the training and the observance of training and labor discipline and to increase their social activity on the basis of the development of self-control in the pupil collectives.

The review of training plans which was accomplished by the USSR Ministry of Higher and Secondary Specialized Education and branch ministries and departments jointly with the USSR Ministry of Education and the USSR Academy of Pedagogical Sciences and their introduction everywhere beginning 1 September of the last training year is an important step in the development of secondary specialized education and a substantial step in the matter of realizing the Basic Directions for the Reform of the General Educational and Vocational School. In this connection, it should be stressed that the new training plans have a list of general educational subjects which is common with the secondary general educational school: a common content of subjects for the humanities and natural-mathematical cycles. The time allotted for the study of general-educational subjects in the technical schools and academies is only insignificantly less than in the general educational school (the total difference is about 200 hours for the entire general educational cycle). When determining the standards, we relied on the basic programs developed by the USSR Academy of Pedagogical Sciences and which were used when preparing the training programs in biology, the economic geography of foreign countries, history, physics, literature, foreign language, and drawing. This loss of time is made up in considerable measure by the study, in secondary specialized educational institutions, of general technical disciplines which permit intensifying the pupils' training in the basic sciences.

Thus, the training plans of the contemporary secondary specialized school have begun to meet to an even greater degree the Lenin principles concerning its development as a general-educational, labor, and polytechnical school and permit the successful accomplishment of the task of molding a comprehensively developed personality of the specialist who is capable of work and continuing his education.

The indicated programs have now been elaborated and approved. Prior to the start of the training year it is important to discuss attentively once again the special features of the new training plans and programs at sessions of the subject (cycle) commissions and pedagogical councils, to organize the acquaintance of the

pupils with their requirements, define in detail the list and volume of material for the subjects being studied, and eliminate the overload of the training programs, freeing them from unnecessarily complicated, secondary material.

The retraining of specialists to teach new disciplines should be conducted in good time, the pupils should be provided with training literature, new offices should be created, or operating ones should be reequipped, providing them with technical means of instruction, textbooks, motion picture films, and film strips.

An important place in the reform is occupied by questions of improving textbooks and training aids which are in effect and creating books for new disciplines which reflect the contemporary state of development of science and technology. Instructors, specialists, and scientists have been assigned the task of creating training literature which would be distinguished by a high ideological and scientific content, simplicity and brevity, accuracy, clarity, and vivacity of presentation, and perfection of the methodological apparatus. It is our task to satisfy completely the requirements of the educational institutions for training, reference, and popular-scientific literature in the basic sciences and elective courses.

During the past training year 26 central publishing houses and 10 publishing houses of the union republics worked on the production of training literature for secondary specialized educational institutions. More than 1,200 titles of books for technical schools and academies with a total printing of more than 36 million copies were published in 1981-1983 alone. In implementing the instructions of the November (1982) and June (1983) plenums of the CPSU Central Committee the necessary corrections were introduced to the first edition of books on questions of economics, the automation of production, the efficient use of raw materials and power resources, and the employment of computer equipment. Special attention was devoted to the publication of literature on specialties connected with the most important branches of the national economy: the mining and power industries, machine building, transportation, and construction, and also with the realization of the USSR Food and Energy Programs.

Textbooks which had been awarded USSR State Prizes became the standard for high quality of training literature: "Radioperedayushchiye ustroystva" [Radio Transmitters] whose authors are V. F. Berkan and V. K. Zhdanov; "Klassicheskiy tanets--shkola myzhskogo ispolnitel'stva" [The Classical Dance--The School of Masculine Performance] whose author is N. I. Tarasov; and "Otkrytaya razrabotka mestorozhdeniy poleznykh iskopayemykh" [The Open Working of Mineral Deposits] whose author is K. V. Bunin.

The high evaluation of pedagogical public opinion was received by the textbooks "Chercheniye" [Drawing] by S. K. Bogolyubov and A. V. Voynov, "Teoreticheskiye osnovy elektrotekhniki" [Theoretical Principles of Electrical Engineering] by F. Ye. Yevdokimov, and "Psikhologiya" [Psychology] by V. S. Kuzin which were prepared with consideration of the requirements of the times. They are distinguished by pithiness, accuracy of the text and illustrations, complete conformance with the training programs, the careful selection of the necessary information, the combination of their scientific character with simplicity, and clarity in presenting the instructional material.



At the same time, there are many serious shortcomings in providing the technical schools and academies with literature. The necessary textbooks and training aids are still lacking in full volume in a number of educational institutions. Requisitions for literature are not completely satisfied. Cases occur where the publishing houses do not accomplish plans for the output of training literature. The necessary monitoring of the timely preparation of high-quality manuscripts by authors has not been established in all technical schools.

The output of textbooks and training aids requires a further improvement in planning. Determination of the number of copies of training books published by the republic publishing houses in Russian is accomplished without consideration of the requirements of other of the country's technical schools. This leads to unjustified duplication in the production of books by the central and republic publishing houses.

The Training Methods Administration for Secondary Specialized Education of the USSR Ministry of Higher and Secondary Specialized Education together with branch ministries and departments is to accelerate and complete in the shortest time the review of program-methods documentation. It is necessary, first of all, to revise training programs in effect and create new ones so that the authors of textbooks and training aids could begin the creation of new books in good time. In 1985 the Administration and Scientific-Methods Office are obliged to present for approval a long-range plan for the preparation and publication of textbooks and training aids for the years 1986-1990. It will include more than 3,000 titles of training literature. As is known, all branch ministries and departments are participating in this work. It is collective work and it should proceed from an accurate analysis of the state of supply of the pupils with textbooks and training aids in accordance with the new training plans. First of all, the preparation and publication of textbooks should be ensured in the new directions of science, equipment, and technology which are connected with the study of computer equipment, systems for automated designing, flexible automated production works, robot technology, and microprocessors. Special attention should be devoted to the preparation of textbooks in accordance with the cycle of socio-economic and social disciplines.

The 26th Party Congress and the April plenum of the CPSU Central Committee defined as one of the leading tasks the one for raising the level of instruction which synthesizes within itself many elements of pedagogical work. The CPSU Central Committee demanded the decisive eradication of the manifestation of formalism in the content and methods of educational-indoctrinational work and school life and in grading the pupils' knowledge.

The accomplishment of reform requires special attention to improving the organization of the lesson and teaching forms and methods. An ever larger place in methods of instruction should be occupied by methods which develop the cognitive activity and creative thinking of the pupils. Theoretical knowledge should be reinforced with the specific content of the specialist's future activity. Under these conditions, attention should be intensified toward practical and laboratory lessons of the pupils and the demonstration of the technological application of the laws of physics, chemistry, and biology. As regards subjects of the general technical and general special cycles, they should bear a clearly expressed applied nature.



The party sees the school of the immediate future as materially-technically, methodologically, and scientifically renewed, with the broad use of active methods of instruction. Many of the country's technical schools and academies are actively using technical means of instruction even today and are conducting lessons with the critique and analysis of specific production situations and tasks and practical games. These methods of instruction are being widely used in the technical schools of the Ministries of Higher and Secondary Specialized Education in the RSFSR, Ukrainian SSR, Belorussian SSR, Latvia, Estonia, and Moldavia. The first results of the educational institutions' work in this directions are analyzed and brought up for discussion. Thus, the experience of the Bobruysk Mechanical-Technical School in the employment of practical games on lessons in 1983 was considered on a seminar; in the Kiev Technical School for Hotel Management a scientific-practical conference was conducted on the simulation of production situations in teaching practice.

The employment of active methods of instruction is a requirement of the times, and it is the task of the ministries and departments within whose jurisdiction the technical schools and academies are found to generalize the accumulated experience more efficiently and to consider it critically. It should be kept in mind that frequently extremes are committed in any kinds of undertakings and, at times even a superficial approach. For example, we should hardly be enamored of practical games in the scenarios of which the pupils perform roles which are knowingly negative and the content and functions of the executors are so impoverished that even in the first approximation they cannot take the place of the average standard for an actual production situation.

The problem of universal compulsory education of the pupils in the field of computer equipment and of ensuring the wide employment of computers in the training process is becoming exceptionally urgent. The range of contemporary microcomputers is so broad that it permits pupils who master computers to accomplish the most difficult calculations quickly and accurately. The combination of symbolic, graphical, and audio presentations of instructional information on microcomputers gives the users tremendous methodological and didactic capabilities to intensify the training process.

The production of microcalculators of the MKSh-2-type, PLS-3 polygons of logic circuits, and computers of the "Arat" type (personal computers) is now being expanded and, consequently, conditions are being created for the introduction of computer equipment in each educational institution.

In examining ways to raise the level of instruction and determining the main directions and reserves for a growth in the effectiveness of the training process, we are required, first of all, to turn to the generalization and propagandizing of the leading experience of the country's best educational institutions and to a study of the leading teachers' work. In light of the reform, we should stress the importance and urgency of general attention to the teacher's personality, of improvement in the organization of the contemporary lesson, and of raising the responsibility of the teacher collective, family, and the pupils themselves for the quality of training and the observance of training and labor discipline.

Attention is merited by the experience of a teacher of the Zaporozhye Metallurgical Technical School, Honored Teacher of the Ukrainian SSR, T. K. Kurganova.

She teaches the subjects "Science of Metals" and "Metals Heat Treatment Technology." Here lessons differ from one another. Along with the traditional form for presenting new material she practices information communications and reports by the pupils on the lesson, practical games, and check work with the accomplishment of tasks having a production nature, and she conducts survey lectures--interviews and cross-questionings.

A number of questions arise among the personnel of secondary specialized educational institutions in connection with the introduction of a training-methods complex of a subject, specialty, or educational institution. Some pose the question approximately as follows: aren't there too many complexes and, in connection with this, formalized papers, reports, and so forth?

The questions are valid and, it seems to us, all teachers should not begin this work hastily and in a forced manner and try simultaneously to create training-methods complexes for a subject, specialty, and educational institution. The accomplishment of such a task requires great time, the accumulation of experience, and expenditures of considerable organizational and technical resources. It can be entrusted, first of all, to experienced teachers and enthusiasts who subsequently could carry along other teachers behind them.

In this connection the Administration, Scientific Methods Office, and NIIVSh [Scientific Research Institute on Problems of the Higher School], generalizing the experience of the leading teachers of the country's technical schools and academies, prepared a draft training-methods complex for a subject which represents the totality of interconnected normative and methodological documents which determine the content of the subject and the methods and means for molding in the pupils systems of knowledge, abilities, and professional and civic qualities.

Of course, the main meaning of these documents should be seen not in the number of papers and columns which the teacher should fill out but in what will be in a systematized form at the teacher's work site. And it is not a matter of binding the initiative of the teachers and fitting knowledge under one mold, but creating a single scientific-methods policy. And, of course, methodological work should be aimed at the intensity of instruction. There already is experience in the active use of contemporary technical means in teaching.

Thus, in 1983, in the pavilion, "Popular Education" at the Exhibition of Achievements of the National Economy of the USSR, the USSR Ministry of Higher and Secondary Specialized Education showed a thematic exhibit, "The Intensification of the Training Process in the Higher and Secondary Specialized School." It demonstrated the experience of almost 150 of the country's technical schools and academies which presented full-scale exhibits, albums, methodological recommendations, scientific-methodological complexes of subjects, simulators, laboratory benches, and complexes for technical means of instruction. Fragments of training-methods complexes were presented at the exhibition: on history--from the Dnepropetrovsk Machine-Building Technical School (author--teacher G. S. Nasonova); and on drawing--from the Donetsk Electrometallurgical Technical School (author--teacher E. Ya. Mozgovaya).

The combined employment of technical means of instruction found reflection in many exhibits. A mockup of the office-laboratory of the Novocherkassk

Electromechanical Technical School demonstrated the employment of a closed television system in combination with other technical means of instruction. The Baku Polytechnical School presented a fragment of a closed-type television station. The interest of the teaching public was caused by checking and teaching machines created by the Nevinnomysk Power Technical School.

The leaders of the educational institution are responsible for the quality of the lesson and organization of the training process together with the teachers. They are called upon to ensure the systematic monitoring of the lessons, of the accomplishment of the training programs, and of the pupils' level of knowledge, abilities, and skills. The life of the prominent teacher and principal of the Pavlysh secondary school, V. A. Sukhomlinskiy, should be a model for imitation. In his book "Conversation with a Young School Principal," he wrote: "I made it a rule for myself: before the time that I visited two lessons, I consider that I have done nothing in school." And further: "The leader who does not rub shoulders with the teachers on lessons can be compared with a person who is at work blindfolded and wanders as if in posterity: he hears something but he sees nothing, knows nothing, and understands nothing."

A very figurative and exact comparison and we should remind each other of this a little more often. Questions of improving pedagogical skill, monitoring within the technical school, and raising the level of inspection should be constantly within the field of view of the educational institutions' pedagogical councils.

A rise in the level of teaching requires making methodological work considerably more active. Much here is determined by the activity of the methodological offices which have been created and are operating today in many educational institutions. We present as an example the methodological office of the Bobruysk Vehicle Transport Technical School (principal of the technical school F. F. Askerko) which can be called a short encyclopedia of contemporary didactic thought. "The best from each one--for the collective, everything better in the collective--for each teacher"--these words became the slogan for its work. Here reference and general pedagogical literature necessary for preparing for a lesson, classroom hour, extracurricular measure, or parent's meeting are collected. Everything is classified by subjects and sub-subjects, which permits finding the needed material in two or three minutes. Innovations from pedagogical science and journals published by the USSR Ministry of Education, the USSR State Committee of the Council of Ministers on Vocational and Technical Education, and the USSR Ministry of Higher and Secondary Specialized Education are presented here. Bibliographic work which encompasses all pedagogical journals, books, papers, and reports has been thought out in an excellent manner. The technical school publishes a methodological collection, "Pedagogicheskiye razdum'ya" [Pedagogical Thoughts] in the editions of which more than 500 methodological studies of teachers have been collected. The teacher collective of the technical school is living a full-blooded and interesting creative life and has a considerate attitude toward the achievements of individual teachers. Theoretical conferences are constantly conducted here. Teachers' work sites have been set up in the office, all necessary contemporary technical equipment has been installed, and a stock of film strips, slides, and a record and tape library have been created. The office maintains ties with many of the country's educational institutions. Materials from the work experience of the country's leading teachers are placed in a special album, "Methodological Money Box."



In examining ways for a further improvement of secondary specialized education, it is necessary to proceed from a scientific analysis of the profound changes and transformations which are occurring in all spheres of our society's material and spiritual life and to consider the prospects for the scientific and technical revolution which is unfolding, the intensive nature of the economy's development, and the realization of large-scale socio-economic programs. The grandiose tasks of the end of this century and the start of the coming century, it is stressed in the materials of the April (1984) plenum of the CPSU Central Committee, will be accomplished by those who today are sitting at the school desk. Pupils of the secondary general educational and vocational as well as the higher school are to lead all branches of the national economy to the most advanced positions of science and technology, accomplish the broad automation of production, and ensure a cardinal rise in the productivity of labor and the output of production at the level of the best world models. In light of these requirements, we should also approach the measurement of the breadth and depth of knowledge of specialists with a secondary specialized education which requires not only high theoretical and special training, but also labor tempering, professional skill, and work abilities and habits on contemporary equipment and a conscientious, creative attitude toward labor.

The important tasks which the secondary specialized school is called upon to accomplish are connected, first of all, with satisfying the ever increasing requirements of all branches of the national economy for middle level specialists and with a rise in their role in contemporary production as organizers and executors of complex functions at the work site and in the brigade, shift, and laboratory. A large number of specialists are required for the production and operation of technical robot systems, transfer machines, automated control systems, supporting various quality control systems, and ensuring the reliability of articles. An ever growing number of middle level specialists are necessary for the population services sphere.

In this connection, an important task which determines a rise in the effectiveness of secondary specialized education is the improvement of training planning and the distribution and use of specialists. It is necessary to improve cooperation in training personnel and the specialization of the educational institutions and to eliminate unnecessary parallelism in this work.

Important adjustments should be made to the system which has developed for the acceptance, distribution, and use of specialists. We cannot fail to consider that in the immediate future an ever greater number of specialists, especially with a secondary specialized education, will be used directly at the work sites connected with advanced, new equipment and with the servicing of the complex equipment of automated systems.

In turn, this will require refining for each branch the existing list of professions of higher-category workers for whom, according to level of qualification, a secondary specialized education is required. At the same time, work should be continued on the clearer demarcation of functions for specialists with higher and medium qualifications. The elaboration of the corresponding normative documents will permit disclosing additional reserves to increase the effectiveness of the country's labor resources.



The USSR State Committee for Vocational and Technical Education jointly with the USSR State Committee on Labor and Social Problems, the USSR Ministry of Higher and Secondary Specialized Education, the All-Union Central Trade Union Council, and other ministries and departments have been charged with working up and approving a list of professions and specialties in 1984-1985 for the training of qualified workers in secondary vocational and technical schools, secondary specialized educational institutions, and directly on production.

In the area of the labor indoctrination of middle-level specialists, the task also consists of realizing most completely the potential possibilities of the technical schools and academies in improving the practical training of the pupils and teaching the pupils working professions on the basis of the output of actual products in training-production shops. There are many ministries in whose educational institutions this work is well organized (the USSR Ministry of Non-ferrous Metallurgy, the USSR Ministry of Power and Electrification, the Ministry of the Aviation Industry, Ministry of the Electronics Industry, and others). Thus, the training-production shops of the Leningrad Radio Polytechnical School produce technical means of instruction and other training equipment valued at 1.2 million rubles per year.

The experience of the Ministries of Higher and Secondary Specialized Education of Belorussia and Lithuania which have organized cost-accounting associations on the basis of technical-school shops deserves support and further dissemination. But it should be said directly that these examples do not yet have a mass nature. This is why the ministries and departments must implement a complex of measures which will permit the closer tying of training and indoctrinational work in secondary specialized educational institutions with actual production labor in training shops and in production.

The administrative organs of branch ministry educational institutions and departments must work out and implement a long-term program for the development of the technical schools' training-material bases and organize their equipping with the latest training-laboratory and machine-tool as well as computer equipment.

A significant role in improving the practical instruction of the pupils should be played by recommendations worked out by the USSR Ministry of Higher and Secondary Specialized Education jointly with NIIVSh on the preparation of standard common programs for production practice for technical schools and academies. The indicated recommendations permit determining the content of production practice on the basis of continuity and the didactically substantiated sequence in the process for molding a system of abilities and skills in the pupils in accordance with the qualification requirements imposed on the specialist. Also of value is the fact that the new programs are oriented on the molding of the future specialist's ideological and moral qualities and respect for the labor traditions of enterprise collectives. They envision their socio-political practice with the goal of acquiring experience in mass-political, organizational, and indoctrinational work.

The standard common programs of ministries and departments are being created in the specialties assigned to them. They are given the right to introduce corrections in the standard common programs or, on their basis, to work out their own programs with consideration of the branch's specific nature. Work programs will be compiled in the educational institutions on the basis of the standard programs.

Questions of the continuity of popular education subsystems are acquiring significant urgency under contemporary conditions. The April plenum of the CPSU Central Committee stressed that "the development of general secondary and vocational education brings their goals and tasks ever closer together and combines them. The administrative organs are called upon steadily to conduct a single state policy in the area of the education and indoctrination of the rising generations and to solve urgent problems in a timely and creative manner...." In this connection, tremendous socio-economic significance is had in particular by questions of continuity in the training of personnel between technical schools and secondary vocational and technical schools. In recent years, the rates of development of the vocational educational system were exceptionally high. In the next few years it is envisaged that enrollment in the vocational and technical school will approximately double. The rapid growth of the vocational-technical education system is a new factor which should be thoroughly analyzed and considered when working out long-range problems in the training of specialists. In the future, it is necessary to consider the graduates of secondary and technical academies as an important base for the staffing of technical schools with a contingent of youth having good labor tempering and practical training. In this connection, to increase the socio-economic effectiveness of secondary specialized education the USSR Ministry of Higher and Secondary Specialized Education profoundly analyzed the training plans of the vocational and technical schools and adopted a decision on the conduct of an experiment in training specialists with a secondary specialized education from among graduates of vocational and technical schools in reduced times.

The periods of instruction in effect have been reduced in the experimental plans: for the daytime form of instruction by almost a year, and for the evening form--by seven to nine months. The basic reduction in time has been accomplished through the complete or partial abolition of training and technological practice as well as by a small reduction in the extent of study of some subjects which duplicate training material in the vocational and technical schools.

Leader specialties (there are 14 of them) have been determined as have specific technical schools in which this training will be conducted. It seems to us that this direction is very promising, and in the next few years the range of ministries and departments and the educational institutions participating in this work will be expanded.

Of exceptional importance is the assignment of the CPSU Central Committee concerning the development and increase in effectiveness of the brigade form of organization and incentive of labor in industry and, in accordance with this, the organization, in secondary specialized educational institutions, of the training of technician-organizers from among qualified workers who have worked as brigade leaders for at least three years and have a secondary education.

Such training will also be accomplished in reduced times. It pursues the goal of giving good theoretical and specialized training to this category of leaders of the primary production elements and equipping them with additional knowledge in the field of pedagogy, psychology, economics, and the control of production. This direction in the development of secondary specialized education is also promising since in industry alone now about 1.5 million brigades are operating which embrace almost 60 percent of the workers.

The USSR Ministry of Higher and Secondary Specialized Education together with branch ministries began the elaboration of provisions for the organization of training of the technician-organizers in which the conditions and times for the enrollment of pupils will be defined.

It is intended to include in the list of technician-organizers about 30 specialties in the evening and 40 in the correspondence forms of instruction. Organs for the direction of secondary specialized educational institutions have been given recommendations on studying questions of the brigade form for the organization and motivation of labor in the subjects, "Soviet Law," "Labor Protection," "The Economics, Organization, and Planning of Production," "Production Technology," "Technical Standard Setting," and so forth. Having studied the indicated questions, the pupils receive the necessary information concerning the application of labor law, the economic and social effectiveness from the introduction of the brigade form for the organization of labor, the payment and motivation of labor, and managing the brigade collective.

In the new training year, the central place in the activity of teaching collectives of secondary specialized educational institutions will be occupied by questions of a further improvement in the communist indoctrination of the pupils. Being guided by the decisions of the 26th CPSU Congress and the June (1983) plenum of the CPSU Central Committee, the collectives of the educational institutions have begun to make more effective use of the rich arsenal of means for the indoctrination of the youth which are available. The overwhelming majority of combined plans for indoctrinational work for the entire period of instruction were approved and competitions in the pupils' creative work in socio-political subject matter, amateur arts, and scientific and technical creativity received broad development. The increase in the activity and effectiveness of ideological-political work is greatly influenced by the new content of the qualification characteristics for specialists. Set forth in them are the party's basic requirements for the world-outlook training of the future specialists, the separation of socio-economic disciplines into an independent cycle, the organization of their continuous study for the duration of the specialist's entire period of training, and the introduction of state examinations for all specialties on "Social Science" and "Political Economy." All this permits the teacher collectives to devote considerably more time to indoctrinational work and to better coordinate their efforts with public organizations, the family, and labor collectives.

Interesting experience in realizing the decisions of the June (1983) and April (1984) plenums of the CPSU Central Committee has been accumulated by the teaching collective of the Chelyabinsk Metallurgical Technical School which, relying on the assistance of the collectives of the metallurgical combine and the polytechnical institute, was able to attract to work with the student youth experienced workers and specialists, scientists, and a broad range of public activists. The Komsomol committees of the combine and the technical school organized the competition of the training groups with the combine's production brigades. They discuss the most important questions in the life of the collectives at joint Komsomol meetings, assume mutual obligations, and report on the results of training, labor, and social work. Each year more than 500 technical and engineering personnel supervise production practice and diploma and course planning here.



One out of every two diploma projects is prepared on an actual basis, and one out of four is recommended for introduction and is defended directly in the shops. Scientists of the institute assist the technical school in the development of training programs in the new specialty, "The Operation of Industrial Robots." The assistance of the combine and the institute and their joint work are having a favorable influence on the final results of the training and indoctrination process. High progress indices have been attained in the technical school, the number of dropouts has been reduced significantly, and the plan for training specialists is being accomplished successfully.

The work experience of the indicated collectives was approved at the joint session of the Komsomol Central Committee Bureau, the board of the USSR Ministry of Higher and Secondary Specialized Education, and the board of the USSR Ministry of Ferrous Metallurgy.

The work experience of the Kuznetsk industrial and metallurgical technical schools in strengthening the ties between the pupils' vocational training and production is just as interesting.

The management of the Western Siberian and Kuznetsk Metallurgical Combines is taking an active part in the activity of the pedagogical councils, and joint sessions of the training-methods councils of enterprises and technical schools are being organized. Chief specialists and leaders of combine subdivisions have joined the composition of the subject (cycle) commissions of the technical schools.

In the new training year, special attention will be devoted to the military-patriotic indoctrination of the student youth. At the threshold of preparation for and celebration of the 40th anniversary of the Soviet people's victory in the Great Patriotic War, pedagogical councils and public organizations should accomplish specific measures in all groups and in all courses and sections which are directed toward molding in the pupils' consciousness clear class positions, high political vigilance, irreconcilability toward imperialism, and conviction in the rightness and invincibility of socialism. The work experience of the technical schools and academies of Kursk and Volgograd Oblasts, which received a high grade from the board of the USSR Ministry of Higher and Secondary Specialized Education, shows how it can be conducted with many plans and interestingly.

Organs for the direction of educational institutions and collectives of technical schools and academies are to do much work for the successful accomplishment of the great and important tasks posed in the decisions of the April (1984) plenum of the CPSU Central Committee and in the Basic Directions for Reform of the General Educational and Vocational School. It is important that already in the new training year we achieve concrete practical results in the development of secondary specialized education and ensure an increase in its contribution to the country's socio-economic and scientific-technical progress.

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## EDUCATION

### MINISTRY OFFICIAL STATES HIGHER EDUCATION GOALS FOR NEW YEAR

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[Article by USSR First Deputy Minister of Higher and Secondary Specialized Education, Professor N. F. Krasnov: "The Higher School During the New Academic Year"]

[Text] The higher school of our country is beginning the new academic year in an atmosphere of universal labor and sociopolitical enthusiasm, which formed under the influence of the decisions of the April (1984) CPSU Central Committee and the 1st Session, 11th Convocation, of the USSR Supreme Soviet. In the decisions of the plenum and in the speech at it of General Secretary of the CPSU Central Committee Comrade K. U. Chernenko the Soviet people see their urgent program of actions, which specifies the main directions of the improvement of society of mature socialism.

The workers of the higher school, like all the Soviet people, received with unanimous approval the decisions of the plenum and session and the election of General Secretary of the CPSU Central Committee Comrade K. U. Chernenko as Chairman of the Presidium of the USSR Supreme Soviet. In the documents of the plenum and the session of the USSR Supreme Soviet they see a vivid display of the increasing concern of the Communist Party and its Leninist Central Committee for the improvement of the national state system and socialist democracy, the increase of the culture and education of the Soviet people, the acceleration of the rate of the socioeconomic, scientific and technical progress of our country and the preservation of peace through the world. Professors and instructors, scientific associates, graduate students and undergraduates, workers and employees wholly support the program theses on the questions of public education, which are contained in the speech of General Secretary of the CPSU Central Committee Comrade K. U. Chernenko at the plenum, and regard them as a specific guide to action in the matter of the further improvement of higher and secondary specialized education and the training of highly skilled, ideologically seasoned specialists.

In fulfilling the decisions of the April (1984) CPSU Central Committee Plenum and the 1st Session, 11th Convocation, of the USSR Supreme Soviet, the higher educational institutions and the organs of their management have elaborated and have begun the implementation of comprehensive measures, which are aimed at the implementation of the Basic Directions of the Reform of the General

Educational and Vocational School and the decrees of the CPSU Central Committee and the USSR Council of Ministers, which were adopted in conformity with them. The goal of these measures is to raise the work of the secondary school to a new, higher stage, to eliminate the shortcomings which exist in its activity, to ensure that the students would master more successfully the fundamentals of the sciences, to improve radically the labor education of young people and to form among them firm communist convictions, moral purity, a love for the socialist homeland and proletarian internationalism.

During the accomplishment of the tasks, which follow from the reform, we should remember that concern for the school and for the training and the increase of the skills of teachers is a most important task of all Soviet higher educational institutions.

During the commenced academic year 5.3 million undergraduates will study at 891 higher educational institutions, of them 3 million will study in day departments. This year more than 1 million people have been admitted to the first year (645,000 have been admitted to the day form of instruction).

In all 201 pedagogical institutes, 67 universities and 34 engineering and technical higher educational institutions, in the pedagogical specialties of which 1.17 million undergraduates are being educated (this year about 260,000 people were admitted), are carrying out the training of teachers with a higher education for institutions of education and vocational and technical education.

The implementation of the reform will contribute to the dynamic growth of pedagogical institutes. They will receive a modern educational and material base and will be reinforced by highly skilled teaching personnel. The gradual transition to a 5-year period of instruction in the specialties "The Russian Language and Literature," "The Native Language and Literature," "History," "Mathematics," "Physics" and "General Technical Subjects and Labor" is envisaged.

As a whole the admission to the higher school took place this year in an organized and coordinated manner. The higher educational institutions, which deal with the questions of admission during the entire academic year, devote constant attention to the vocational guidance of future matriculants, hold contests of school children on an extensive scale and set up various groups, coped especially well with this matter. The work of the preparatory departments and courses, which operated at the majority of educational institutions, was also of considerable importance. The extensive admission of the new reinforcement to pedagogical institutes and pedagogical specialties of universities became possible owing to the dissemination of the experience of a number of leading collectives in the organization of vocational guidance work and in the increase of the role of schools and public education departments in the filling up of these specialties. The higher educational institutions, which train specialists for the leading sectors of the national economy (heavy industry, the electronics industry, power engineering, machine building and instrument making), also achieved positive results in the matter of admitting new students. Here practically year round in close contact with the

corresponding enterprises and organizations they dealt with the formation of the student body.

It is not out of place to stress that the good quality of the new admission of undergraduates is an important condition of the further increase of the level of training of specialists. Therefore the executives of higher educational institutions should begin already now the preparation for the new admission, first of all for the filling up of preparatory departments. It is necessary to take additional steps and to intensify the work on the selection and admission for training of conscripts, who are being transferred to the reserve from the ranks of the USSR Armed Forces. The admission regulations grant this category of young people a number of preferences and advantages in enrollment in higher educational institutions.

Now the collectives of higher educational institutions should give the maximum assistance to first year students in the organization of their educational work and the correct drawing up of the schedule of this work. If this is not done, as experience shows, the dropout rate from higher educational institutions for poor progress increases, and among first year students it is especially high. Rectors should take under special control the educational process in the first year, the provision of students with educational literature and the organization of their independent work. The conducting of classes here should be assigned to the most experienced and skilled instructors. All this makes it possible to shorten the period of adaptation of first year students to the conditions of educational labor, which are new for them.

A subject of special concern of the offices of deans, chairs and instructors is the increase of the level of organization and the quality of the classes of first year students, who are called up at the end of the academic year to the ranks of the USSR Armed Forces, so that they would take the transfer examinations on time and successfully.

At the same time measures, which ensure the quickest possible inclusion in the schedule of classes of students, who have begun studies after being transferred to the reserves from the USSR Armed Forces, should be elaborated and implemented. The utmost assistance in the successful mastering of the educational material should be given to them.

The attention to the educational and training work with students of the upper and graduating classes should be increased. In recent years their progress has decreased somewhat, the number of unsatisfactory defenses of graduation projects and works has increased.

One of the crucial aspects of the activity of higher educational institutions is the assignment of graduates to a job. Here there are still many shortcomings, unsolved problems and bottlenecks. Annually more than 70,000 young specialists (among them about 10 percent are graduates of pedagogical institutes) do not appear at the job in accordance with assignment. This is a direct consequence of the substantial shortcomings in educational work at higher educational institutions, and just criticism is being heard with respect to them. The executives of higher educational



institutions are obliged to determinedly correct the formed situation, to ensure the full appearance of all their graduates at the workplaces, to improve the very mechanism of assignment and not to allow so-called free assignment.

The collectives of higher educational institutions should not in the least free themselves of the responsibility for the improper use of graduates at the works and on the same level of enterprises take part in getting young specialists a job with allowance made for the skills.

The important tasks, which have been posed by the party and government in connection with the carrying out of the reform of the secondary and vocational and technical school, are placing particular responsibility on higher educational institutions. The implementation of the reform will cause a profound reorganization of all the units of public education, beginning with the preschool training of children and ending with the postgraduate education of executives and specialists.

A priority matter of great state importance is the revision of the content of pedagogical education on the basis of the methods and techniques of the scientific organization of the educational process. In order to provide school teachers, instructors of vocational and technical schools and tekhnikums and teachers of preschool institutions with the latest knowledge and good practical training, first of all in the principles of modern production, it is necessary in addition to revise the curricula, syllabuses and skills characteristics of pedagogical specialties. When drawing up educational documents it is necessary to ensure the close unity of the pedagogical and technological training of teachers and instructors and to envisage the broadening of the contact of higher educational institutions, schools and institutions with production.

Great responsibility for the accomplishment of such an important stage of the reform as the transition to the universal vocational education of young people has also been assigned to the higher school. This transition will make it possible already in the immediate future to strengthen the base for the specialized training of undergraduates and the evening students of schools and vocational and technical schools, and this circumstance should find reflection in the curricula and syllabuses and in the organization of the educational and training process at higher educational institutions.

The further development of the vocational and technical school is inconceivable without the increase of the level of training of teachers of labor, engineer-instructors and foremen of on-the-job training. The role of these teaching personnel is extremely great. They should be themselves at the level of modern production and the achievements of pedagogical theory and practice. In this connection much has to be done for the improvement of pedagogical engineering education, the stepping up of the activity of local organs of vocational and technical education and the broadening of their cooperation with the faculties and departments of technical and agricultural higher educational institutions.



It is necessary to ensure the combined development of the higher and secondary school. In this regard one should think about the continuity of the school courses in mathematics, physics and biology and the corresponding academic subjects at higher educational institutions.

The training of teachers of the Russian language and literature for national schools has to be improved significantly. Under the conditions of the reform the ministries of higher and secondary specialized education of the union republics should tighten up the supervision of this important unit of pedagogical education.

The reform of the school is increasing the pedagogical mission of universities. Advanced educational psychology schools will undergo further development at them. The activity of universities will be coordinated more closely with the work of pedagogical institutes and schools and institutions of education locally. Both the universities and all the higher educational institutions, which train personnel for public education, should strengthen considerably their daily contacts with secondary educational institutions and ensure their effective use for the practical training of teachers and instructors and the implementation of scientific and methods developments for the school. It is necessary to specify the base educational institutions and to attach them to pedagogical institutes, pedagogical engineering faculties and universities as their most important subdivisions, setting up wherever this is advisable affiliates of the educational psychology and characteristic chairs.

The entire system of patronage relations of higher and secondary educational institutions should also be thought over from the indicated standpoint. Every higher educational institution will receive permanent partners--the schools, vocational and technical schools and tekhnikums attached to them, at which vocational guidance will be developed, elective classes will be organized and assistance in the increase of the skills of teaching personnel will be set up.

In the process of carrying out the directives of the party and government on the higher school foremost attention is being devoted to the improvement of the content of higher education, first of all at the higher educational institutions which specialize in providing the leading sectors of the national economy with personnel. It is necessary to transform these higher educational institutions into genuine technical universities, which are capable of carrying out the training of specialists with allowance made for the most advanced achievements of science and technology, in unity with the performance of basic and applied research, the increase of the skills and the advanced training of personnel of the national economy. It is necessary to work more vigorously and purposefully on the tasks of increasing the technical level of the education of specialists, especially engineers. It is necessary to reduce, to shorten the time of the saturation of the educational process with topical material in the area of the development and operation of versatile automated production systems, computer-aided design systems, robots and robotic complexes, new types of unitized processing methods. The need has arisen for the revision of the principles, which are being incorporated by the higher school, of the engineering and economic thinking of personnel, which should be aimed to a greater extent at the extensive use of computer

technology, the development of initiative and socialist enterprise, the achievement of the highest end results of production and the utmost saving of manpower, material and energy resources.

The scientific approach to the determination of the content of education requires the focusing of educational materials on the key problems and themes, which determine the occupational character of the specialist. A precise orientation toward the ultimate goals of the training of personnel should be ensured in the teaching of each subject. When drawing up and updating the curricula the logical relations between subjects should be carefully identified and taken into account, interdisciplinary integration should be increased, in order to form among students an integrated system of occupational knowledge, abilities and skills.

An entire set of problems, which are connected with the content of the training of specialists, concerns computer technology. In recent years the evaluation of its role and importance in instruction has changed significantly. The scale of the use of computer technology in the higher school also attests to this. At present more than 6,000 digital computers are in operation at higher educational institutions, while 5 years ago there were only 3,500. The higher school has begun a new stage of the organization of the study of electronic computer technology, which is characterized by the fact that practically all categories of specialists will acquire a solid knowledge and skills, which are necessary for the competent use of computers.

In this connection the reform of traditional educational courses is required. The programs and procedural concepts with regard to a number of subjects, which are now in effect, were formed under different historical conditions and therefore the selection of educational material and the nature of its presentation are still inadequately oriented toward the use of computers and do not reflect their potentials. The structure of the curricula, in which the place of the subjects connected with computers and programming has increased significantly, has already been revised with respect to individual specialties. These subjects are gradually being transferred from the upper to the lower courses and at the same time their functions are changing. Whereas previously these courses were regarded only as general educational courses, now their specific practical goals are already being clearly formulated.

Now the continuous study and use of computers during the entire process of the training of specialists are being introduced at many higher educational institutions. Hence follows the need for the elaboration of unified program methods approaches to the teaching of various subjects from the standpoint of computer technology. But this means that at every higher educational institution the solution of methods and organizational problems of the educational process on the basis of computers should be efficiently coordinated and a uniform terminology and notation should be used.

The study of the problems, which govern the use of computer technology in the sphere of mental labor--the problems of the automation of planning, designing and scientific research--will be improved substantially. The development of microprocessor devices is making it possible to speed up drastically the automation of social production on the basis of computers, which are built

into apparatus, machines, devices and technological processes. Engineering and technical personnel should master perfectly the principles and methods of the use of microcomputers. Higher educational institutions also have to assimilate fully such a scientific and technical direction, which synthesizes the development of technology and microelectronics, as robot building.

The higher school is confidently heading for the improvement of the forms and methods of instruction of students on the basis of the development and use of efficient teaching equipment. The introduction of modern equipment in the practice of instruction and the improvement of the methods skills of instructors are a thoroughly natural process. Teaching equipment makes it possible to use new, more efficient methods of presenting information and to "automate" to a certain extent several, as a rule, labor-consuming operations of the educational process and is affording extensive opportunities for the individualization of instruction in the mass audience.

The use of such effective types of equipment as the educational film and television is constantly being improved, the number of subjects, in which television movie courses have been developed, is increasing. control and teaching devices are being designed, special auditoriums, which are furnished with modern equipment, are being set up.

A larger and larger number of higher educational institutions are changing over from individual measures on the introduction of new methods and equipment in the educational process to the implementation of comprehensive plans of the organization of the educational process, which encompass all aspects of the activity of educational institutions. It is noteworthy that computers are being used more and more extensively in teaching systems. Computer-aided instruction makes it possible to reveal quite thoroughly and use the abilities of students, to regulate the mode of the transmission of information, to obtain, process and store various indicators of educational activity and to record each stage of the formation of knowledge and abilities.

The importance and necessity of the efficient planning and use of the budget of time of students should be specially singled out. It is ensured by the scientifically sound norm setting of educational work, including independent work. Independent work now already takes up about half of all the study time of a student. On the basis of the experience gained by higher educational institutions it seems advisable and possible to develop some typological principles of independent work and a set of didactic demands on it, which would orient students toward the formation of techniques of creative activity. The accomplishment of this task should be closely connected with the elaboration of scientifically sound methods of mental labor. In order to acquire certain skills of self-training, self-education and independent creative work, the future specialist should be acquainted with the scientific principles of mental labor and with the "technology" of this type of human activity. He must be given knowledge on the hygiene and psychology of mental labor, must learn to compile personal work plans and use the equipment intended for this purpose. In this respect the special lectures and practical lessons on the culture of mental labor, which are being conducted at a number of higher educational institutions, are very useful.



The improvement of the forms and methods of instruction is accompanied by the increase of the role of such a leading component of the educational process as the lecture is. It is necessary to seek means of increasing the guiding role of lectures and to improve their content and methods, in particular, to use more extensively the methods of the problem presentation of educational material.

The improvement of lecture instruction involves the realization of a number of requirements. These are the careful selection of scientific material and the logically clear structure of the lecture and its scientific, educational and methods aspects. Every lecture should be dynamic, should contain the latest information, should reflect the prospects of the development of the corresponding field of science and should present the material convincingly and intelligibly. The use of modern teaching equipment and graphic materials contributes in many ways to the success of a lecture.

It is necessary also to ensure the stepping up of the activity of seminar, practical and laboratory lessons--effective forms of the consolidation of knowledge and the development of the creative abilities of students, to extend the scientific and theoretical basis of these lessons and to conduct them at the level of the present achievements of scientific and technical progress.

The methods of problem instruction, the modeling of production situations and other achievements of the didactics of higher educational institutions should be used in combination in the process of intensifying the entire educational process.

Significant steps will be taken for the regulation of student practical work, which for the present has not yet become an integral component of the educational process. The continuous programs of practical work, which are presently being introduced, and the enlistment in its supervision of the most experienced instructors, who know production well, as well as leading workers of enterprises and institutions will contribute to the increase of its effectiveness. This will also promote the further strengthening of the relations of higher educational institutions with production and scientific institutions.

Educational literature is playing an important role in the formation of highly skilled specialists. In 1983 alone 1,170 titles of textbooks and study aids with a total run of 27.9 million copies were published for higher educational institutions. The main attention is being devoted to the preparation and publication of high quality sets of educational literature, first of all on basic, general scientific and general technical subjects, as well as to the publication of textbooks and study aids for mass use.

It is necessary to increase in every possible way the scientific and methods level of textbooks and study aids. Additions and changes, which are required in connection with the extensive use of computer technology, as well as different processing equipment, should be made in them. The preparation of high quality educational literature on computers, including microprocessor devices, on versatile automated production systems, computer-aided design systems and robotics requires serious attention.



The problems connected with the increase of the number of copies of educational literature also require solution. Instead of the 8-10 copies of textbooks, which are needed annually per student, we are publishing only 5-6. Our most important job is the selection of authors and collectives of authors for the preparation of books and the proper organization of their work. At every educational institution they should treat this question with the closest attention, regarding the work of instructors on a new textbook or study aid as a most important methods assignment.

Gradually accomplishing the tasks of the improvement of Marxist-Leninist education and training, which were formulated in the decisions of the (1983) CPSU Central Committee Plenum and in the decree of the CPSU Central Committee "On the Further Improvement of the System of the Increase of the Skills of Instructors of the Social Sciences of Higher Educational Institutions," the higher school is implementing specific steps, which are aimed at the elimination of the shortcomings in practical work [as published].

The ideological and theoretical level of the teaching of the social sciences and the interest of students in them have increased. The practical importance of scientific research in this field has increased. At higher educational institutions the monitoring of the quality of the teaching of Marxist-Leninist theory and the training of social science personnel has been tightened up. The syllabuses in the social sciences have been updated, the materials of the latest CPSU Central Committee plenums and the speeches of Comrade K. U. Chernenko are reflected in them. New curricula of social science specialties have been introduced at universities. The admission of students to them is taking place in conformity with the new regulations. Steps are being taken for the significant improvement of the work of institutes for the increase of the skills of instructors of social sciences attached to the leading universities.

The April (1984) CPSU Central Committee Plenum and the 1st Session, 11th Convocation, of the USSR Supreme Soviet stressed once again the increased responsibility of the public education system for the ideological tempering of young people. "Today the entire educational process," Comrade K. U. Chernenko indicated, "should become to a much greater extent the bearer of a philosophical content.... The task of the school is to form among students Marxist-Leninist conviction and the capacity for independent, creative thinking and to develop the consciousness of one's own responsibility for the fate of the socialist homeland. And, of course, to instill durable immunity to views and morals, which are alien to us."

The effectiveness and vitality of educational work and its connection with the practice of improving mature socialism and the urgent ideological problems of the present--that is what is being placed in the forefront today. It is necessary to strengthen the every possible way the unity of the teaching of the principles of Marxism-Leninism and the formation of durable communist convictions and an active position in life of specialists. In this connection it is necessary to constantly increase the role of the chairs of the social sciences as the leading ideological, theoretical and methods centers of the

entire educational process. Particular importance should be attached to aggressive propaganda and counterpropaganda.

The ethical and esthetic education of future specialists, especially teachers and instructors of schools, and their civic and scientific methods preparation for the moral training of young people require improvement.

The organization of the educational and training process at pedagogical institutes and universities does not always instill in future specialists a sense of real responsibility for the education and training of the rising generation. It is necessary to intensify the methods training of teachers, which will enable them to develop with greater effectiveness among students the skills of self-training and to develop and direct their labor and sociopolitical activity.

Together with party and Komsomol organizations the teaching collectives are obliged to wage a determined campaign against displays of formalism in education and to focus attention on its quality and end results and on the formation among future specialists of communist consciousness. It is necessary to develop more extensively the military and patriotic training of student youth, to develop among them great political and class vigilance and a conscientious attitude toward military obligations and to increase their readiness to defend their socialist society against any encroachments of the imperialist aggressor.

The executives of higher educational institutions and their teaching collectives should enlist Komsomol of higher educational institutions more actively in the solution of educational problems and should increase its influence on the improvement of ideological and mass political work among students. It is necessary to take as a guide in this matter the assumptions and conclusions of the speech of Comrade K. U. Chernenko at the All-Army Conference of Secretaries of Komsomol Organizations. "It is important, first of all, to investigate constantly and thoroughly," Comrade K. U. Chernenko said, "the social and ideological processes, which are occurring in the midst of young people, to analyze them systematically and to help Komsomol organizations in the selection of the basic directions and the most effective forms of work."

The personality of the instructor plays a decisive role in the educational process. That is why every instructor should first of all think out the means of intensifying his daily contact with the audience, striving to organize all pedagogical activity on the basis of the lofty examples which the party and its Leninist Central Committee give us.

The fundamental combination of the socialist system of management with the latest achievements of the scientific and technical revolution is our prime concern, Comrade K. U. Chernenko noted at the April CPSU Central Committee Plenum. A program of actions, which are aimed at the dynamic development of the economy and the changeover of social production to the path of intensive development and the efficient use of the production and scientific potential of our country, was elaborated in the materials of the plenum.

In this matter the role of science of higher educational institutions is very great. The tasks of its further development are specified by the decrees of the CPSU Central Committee and the USSR Council of Ministers "On Increasing the Efficiency of Scientific Research Work at Higher Educational Institutions" (1978), "On the Further Development of the Higher School and the Increase of the Quality of the Training of Specialists" (1979) and "On Measures on the Acceleration of Scientific and Technical Progress in the National Economy" (1983). In fulfilling these decrees, the scientists of higher educational institutions solved a number of important scientific and scientific and technical problems, which are of great importance for industry, as well as for the comprehensive development of science.

However, very much still has to be done. At higher educational institutions the scientific forces are not always used efficiently for the solution of important scientific and technical problems, when conducting research unjustified parallelism and duplication are still occurring. The monitoring of the observance of the basic demand on the organization of economic contractual scientific research--the obtaining of the maximum return from the assets being allocated for its performance--has been relaxed. One frequently has occasion also to come across direct violations of the prevailing legislation on the procedure of financing research. Obviously inadequate attention is being devoted to the introduction of the results of completed research in production. The lag in the development of basic research at many higher educational institutions is arousing serious anxiety.

Higher educational institutions and the organs of their management should analyze thoroughly the shortcomings in scientific activity and should elaborate and implement specific measures, which are aimed at their elimination, in order to raise scientific work at the higher school to a new, higher level.

The high rate of scientific and technical progress and the changeover of the economy to the path of intensive development require of the workers of the national economy the continuous broadening of their knowledge, the increase of their occupational skill and, in necessary instances, retraining. In the system of the increase of the skills of executives and specialists of the national economy there are now more than 1,500 different educational subdivisions--institutes in the sectors of the national economy, faculties at higher educational institutions and various courses at industrial enterprises and organizations. Here 2.8 million people--engineers, agronomists, physicians, teachers and managerial personnel of the national economy, health care and education--annually increase their skills.

The methods supervision of this important matter has been assigned to higher educational institutions, and they have done much for the improvement of its organization and for the utmost increase of the quality of the educational process in the system of the increase of the skills of workers of the national economy. At the same time much still has to be done so that the activity of every educational subdivision of this system would meet the present requirements of scientific and technical progress and the intensification of production.



It is necessary to speak specially about the improvement of the work of the institutes of the advanced training of teachers and the faculties of the increase of the skills of instructors of pedagogical institutes and universities. The need for such improvement stems directly from the Basic Directions of the Reform of the General Educational and Vocational School. The role of the higher pedagogical school here is very great. It is especially important to increase the scientific methods level of the activity of the system of the increase of skills and to ensure the close connection of the instruction of students with their work in the school and with the implementation of the reform.

The proper selection, training, use and increase of the skills of scientific teaching personnel are of enormous importance in the activity of higher educational institutions. More than 410,000 teaching personnel are now carrying out the training of specialists at higher educational institutions. Among them are 18,000 professors and doctors of sciences and more than 180,000 docents and candidates of sciences.

Much attention has begun to be devoted to the work of graduate studies, the improvement of its composition and the increase of the level of training of graduate students. By means of special-purpose graduate studies higher educational institutions have strengthened significantly their scientific teaching personnel. The use of the institution of scientific associates--the most important form of the training of doctors of sciences--is being improved. The training of young scientific teaching personnel from among instructors on probation, mainly in general scientific subjects, is being actively carried out.

The state system of the increase of the skills of instructors, which includes faculties and institutes at leading higher educational institutions, is operating successfully. The organization and content of the probationary work of instructors at leading industrial and agricultural enterprises, at chairs of large institutes and universities and in scientific research organizations are being improved. The increase of the skills of rectors, prorectors, deans and the heads of chairs is being carried out systematically.

Additional steps, which are aimed at the reinforcement of pedagogical institutes with highly skilled instructors, have been taken in recent times. Special attention was directed to the improvement of the qualitative composition of the instructors of the social sciences. Among them at present 3.8 percent are doctors of sciences and about 60 percent are candidates of sciences.

However, in our work with personnel there are still many major shortcomings. First of all there is the uneven distribution of personnel of the highest skills among higher educational institutions, including pedagogical institutes. In the management and scientific teaching staff of a certain portion of these higher educational institutions there are still too few doctors of sciences and professors. Everything is still unfavorable with teaching personnel at the higher educational institutions of Siberia, the North and the Far East. It is necessary to improve this situation substantially. One of the most important tasks is the increase of the



effectiveness of graduate studies and the improvement of the organization of their work and the quality of the training of graduate students. Of course, the activity of the scientific supervisors of graduate students and the increase of their responsibility require greater attention.

Clearer order should be established in the organization of the work which is connected with the certification of scientific teaching personnel, as well as their distribution and use. Today the inadequate competitiveness of the competitions of higher educational institutes when filling positions of instructors is appearing with all obviousness, which is decreasing the demandingness on some portion of them and does not promote the increase of pedagogical skills and scientific skills.

While making great demands on our personnel, we should at the same time display much concern and attention to them and work more actively on the problems, which are connected with the creation of favorable working conditions for them and with the improvement of their living conditions.

Important tasks face the higher school of the country in the matter of the further broadening and strengthening of its material and technical base. In recent years much has been done in this area. At many higher educational institutions the technical supply of the educational process has improved significantly, the laboratories and offices have been supplemented with modern equipment, instruments and computer technology, the network of public dining and medical service has been expanded and its organization has been strengthened, the sports and health improvement base has grown. The supply of students with dormitories has improved somewhat. Cooperation between higher educational institutions in the joint use of the material and technical base is of great benefit.

And still there are many unsolved problems and major shortcomings in this matter. The material base of pedagogical institutes and their poor supply with educational space are arousing particular anxiety. The level of the technical supply of many universities and other higher educational institutions also does not meet present requirements.

The higher school is experiencing an acute need for computer technology and modern scientific and educational equipment. The necessary steps, which are aimed at the improvement of the work of supply organs of the appropriate ministries and departments, are being taken for the solution of this problem. At the same time it should be stressed that here the higher educational institutions themselves can also do much, by using more extensively, for example, the assistance of industrial enterprises, to which the right to allocate free of charge to higher educational institutions modern equipment, instruments, machines, computers, as well as technical specifications has been granted.

When working on the problems of improving the material supply of higher educational institutions, it is necessary at the same time to display great concern for the efficient use of the educational and scientific equipment which is available at them. For at higher educational institutions there is still a significant amount of uninstalled and unused instruments, machines and

devices. A significant portion of the computers operate only half of the standard time, and are being used poorly directly in the educational process.

Serious attention at every higher educational institution should be devoted to the material and personal service of students. There are many unsolved problems here. The need for dormitories has been met far from completely, while the necessary conditions for independent studies of students and cultural, educational and mass physical cultural work are not provided at many of them. There are still not enough places at student dining rooms, at a number of higher educational institutions public dining has been poorly organized. Shortcomings exist in the medical service of students, the network of student polyclinics and other medical, sports and health improvement institutions is still being developed slowly.

The questions of financial, economic and production activity merit significantly greater attention of the executives of educational institutions. Their proper settlement directly affects the substantial improvement of the organization of the educational and training process. In organizing this work, the wise, purposeful expenditure of all the financial assets and material resources, which are being allocated to higher educational institutions, in the interests of the improvement of educational and scientific work should be ensured.

Effective steps, which are aimed at the complete use of the stipend fund in conformity with established procedure, should be taken. At the same time the most strict discipline in financial activity should be ensured and a determined campaign against violations and abuses of any kind should be waged.

The accomplishment of the crucial tasks, which have been assigned to the higher school, have been successfully achieved on the condition of the proper organization of labor and efficient management in all its links. The Council on the Higher School, the scientific teaching and scientific and technical councils, which operate under the auspices of the USSR Ministry of Higher and Secondary Specialized Education and unite in their commissions and sections more than 5,000 leading scientific teaching personnel, scientists of the USSR Academy of Sciences and production specialists, are called upon to play a great role in the further improvement of the management of the higher school. The Councils of Rectors of Higher Educational Institutions, which are called upon to coordinate the activity of higher educational institutions and to disseminate advanced know-how in the area of the scientific organization of the educational process and the improvement of ideological educational and scientific research work, are a most important unit in the system of management of the higher school.

Control within the higher educational institution, as well as the proper and timely use of the materials of state inspection, as is known, are among the effective components of the control of the quality of the training of specialists. At all higher educational institutions and the organs of their management it is necessary to direct the most serious attention to the solution of these problems.

It is also necessary to implement priority measures, which are aimed at the improvement of the style, forms and methods of work, the organization of the verification of the fulfillment of the decrees of management organs and one's own decisions and the increase of labor discipline and the personal responsibility of every worker for the assigned job.

The decisions of the 26th Party Congress and the subsequent CPSU Central Committee Plenums and the corresponding decrees of the CPSU Central Committee and the USSR Council of Ministers provided a broad, detailed program of the further improvement of higher education. During the new academic year, the first day of which has been declared a national holiday, the Day of Knowledge, higher educational institutions have to perform complicated and responsible work, noble and honorable work, which is needed by our country and our people. The collective of many millions of the higher school will do everything necessary and will make its worthy contribution to the fulfillment of the decisions of the 26th Party Congress and the decrees of the June (1983) and April (1984) CPSU Central Committee plenums.

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## EDUCATION

### USSR EDUCATIONAL POTENTIAL ANALYZED

Moscow IZVESTIYA AKADEMII NAUK SSSR--SERIYA EKONOMICHESKAYA in Russian No 4, Jul-Aug 84 pp 3-12

[Article by N. G. Glovatskaya: "Educational Potential--A National Wealth of Society"]

[Text] The article analyzes educational potential as one of the nonmaterial forms of social wealth and a component part of it. Basic attention is paid to studying its qualitative characteristics. The relationships are shown between the quality of the educational system's functioning and the qualitative characteristics of society's educational potential. Particularly posed is the question of the effect and the providing of resources for mass education (the school and PTU [vocational-technical school]).

The national wealth of a country, in including fixed capital (productive and nonproductive), working capital in commodity stocks, consumer durables in the public's domestic economy, in 1982 was assessed at 3.0 trillion rubles [4]. Moreover, the nation possesses enormous natural resources. The explored mineral reserves, the agricultural lands, the forest and water resources can be approximately estimated at 2 trillion rubles.

The recently concluded discussion on the possibilities of a value estimate of natural resources and the related incorporation of them in the wealth of society has produced a positive response.

At present, a more or less acute debate has arisen over the question of the essence of the category of nonmaterial wealth and the possibilities of estimating it. A recognition of the objectively existing nonmaterial forms of wealth will make it possible to have a sounder approach to studying the problem of social production efficiency. Obviously the results of utilizing material wealth depend not only upon the technical or natural properties of their components. An ever-increasing role is played by the development of science, the degree of the population's skills and education and the level of its health. These factors to a significant degree make it possible to have a further rise in material production and its constant technical advance and renewal.



Usually the nonmaterial goods are not included as part of national wealth. In practical terms, these are identified with material goods which are used by the population in the process of current consumption. The replacement of consumption requires the constant reproduction of material goods. There is a different situation with many sociocultural services. Educational services and a number of cultural services create conditions for the all-round development of man and his constant advancement, they inculcate professional skills and improve qualifications. With their aid an unique supply of nonmaterial values is created, the educational and cultural potential of a society. At the same time, wealth exists objectively in the form of scientific discoveries and achievements of art.

The existing methods for calculating material wealth by the expenditures for producing them contribute significantly to the underestimating of the nonmaterial forms of society's wealth. At the same time, of importance is not only a value assessment of material values reflecting the volume of their accumulation but also an assessment of their effectiveness, that is, the effect which society can obtain in using a material wealth. With such an approach to assessing fixed capital, the reserves of working capital and natural resources, nonmaterial forms of wealth are put in the same ranking with material ones, since the maximum national economic effect can be achieved only with a reciprocal conformity in the accumulation of material and nonmaterial values.

The nonmaterial forms of wealth represent an independent value. K. Marx drew particular attention to the presence in society of nonmaterial forms of wealth: "What is wealth but the complete development of man's domination over the forces of nature, that is, both over the forces of so-called 'nature' as well as over the forces of his own nature? What is wealth but an absolute manifestation of the creative gifts of man, without any other prerequisites except the preceding historical development which made this entity of development an end in itself, that is, the development of all human forces as such, independently of whatever previously established scale. Here man does not reproduce himself as just one aspect but rather produces himself in all his entirety and he does not endeavor to remain somehow finally fixed but is in the absolute movement of becoming" [1].

The spiritual potential of society is a major form of nonmaterial wealth. This characterizes the aggregate of achievements in the area of science, art, morality as well as the degree of their dissemination among the population.

In a socialist society there are all the necessary prerequisites for the growth of spiritual potential. And the more rapidly the spiritual values spread, the more the individual and society gain, as the purposeful spread of spiritual values is a condition for the further growth of the material and nonmaterial forms of society's wealth.

The component parts of spiritual potential can be considered: 1) scientific potential; 2) the achievements of art; 3) the educational and cultural level of the population; 4) the moral and ethical characteristics of society's development.

The first two components of spiritual potential basically exist in a material form (books, manuscripts, the nonreproducible works of art and architecture and

so forth). The educational and cultural levels of a population are determined by the degree of the dissemination of existing achievements in the area of science and art. These are characterized by the development level of a man and his creative abilities. K. Marx in his "Theories of Surplus Value" showed that each degree in the development of the productive force of labor exists also "in the form of the skills and abilities of the worker." "Accumulation here is assimilation, the constant preserving and at the same time the transforming of all the perceived and realized." K. Marx went on to write: "...The degree of adeptness of the present population is at each given moment a prerequisite of aggregate production, consequently, it is the main accumulation of wealth, the most important preserved result of the previous labor which, however, exists in live labor itself" [2].

"The degree of adeptness of the present population" under socialism under the conditions of the scientific and technical revolution (STR) is determined by the development level of the educational and cultural systems. Acquired practical skills at the present period play not the last role, however the educational and cultural characteristics of man are becoming the determining factor in the development of production.

Man under the conditions of socialism acts as the aim of society's development and as a means of progress for production. At present, the results of the functioning of production depend not only upon major changes in technical equipping but also upon the degree of development of a man's creative abilities, upon the level of his education and culture. The subjective factor has a large impact upon the degree of utilizing the productive forces, the level of production organization, further progress in the material-technical base (MTB) of the national economy, scientific development and so forth. The transition to each qualitatively new, higher stage of the productive forces is determined not only by the state of science and production, but also by the development level of the subjective factor, that is, by the knowledge of a worker, by the ability to reason independently and by a creative attitude toward labor.

Under these conditions the question arises of the need for maintaining a constant conformity statically and dynamically in the development of the material and nonmaterial elements of society's productive forces. A static conformity means that in the current period the development level of the aggregate labor force conforms to the assimilation and full use of the means of production created by society and to the obtaining of maximum results with rational expenditures. However, the static situation is only a moment in the development of society. The material-technical base of society is developing constantly and progress in scientific knowledge and its introduction into production to a significant degree depend upon the subjective factor. If the skilled personnel corresponding to the requirements of scientific and technical progress have not been trained ahead of time, the realization of the most recent scientific and technical achievements will be held up for a long time. As a result in the national economy a situation may occur of a discrepancy in the development of the MTB and the training of personnel. The bringing of them into conformity requires significant resources and leads to great losses in time.

Obviously it is very difficult to train personnel considering changes in the MTB of future production as the element of ambiguity plays a major role here. At

the same time, the stages of future production can be judged on the basis of the experience of leading enterprises, the highly developed countries and by studying the most recent scientific achievements considering the rate of introducing the scientific discoveries into production. For this reason, even now in the educational system great attention is being paid to the development of creative thought, to the ability to quickly assimilate new information, to adapt to a more developed technical basis and to contribute to its further development. In other words, there must be more rapid development of the subjective factor of production, that is, a reserve in society's educational potential should exist. If one bears in mind only the interests of today, then a scarcity of skilled personnel can arise with all the ensuing consequences.

However, the creation of a reserve in the educational level influences primarily not the economic indicators but rather the development of man, a rise in his needs and progressive changes in their structure.

Moreover, this problem should be posed not only from the viewpoint of the conformity of the material and nonmaterial elements of the productive forces but also from the viewpoint of the existence of a scarcity of labor resources. As has been validly pointed out in the economic literature (see, for example, [7]), the quality of this type of resource to a definite degree is interchangeable with its quantity. For this reason it is essential to constantly improve the quality level of the labor resources and achieve their more rapid development in comparison with the material elements.

In our view, the educational reserve must not be viewed as a surplus. In a society of developed socialism, the all-round development of the individual, in operating as a goal of social progress, can never be superfluous. This idea is beyond any argument.

However, in examining the specific situation in the area of the use of the educational potential of employees, a number of contradictory phenomena can be encountered. Thus, definite types of jobs with the present state of the MTB at a number of enterprises and types of production require a much less level of education than the socially set minimum, a complete secondary education. There have been frequent instances when specialists with a higher education have without reason been indirectly used. These instances can provide grounds for concluding that there is a relative "surplus" of education.

However, as was pointed out above, the development of education cannot be superfluous for forming a harmonious personality. Moreover, the needs of society for education cannot be determined by the state of affairs at individual enterprises or production. The degree of conformity between the educational level of those employed and the material elements of the productive forces is determined on a society-wide scale considering the dynamic moments. Arising moments of a relative (local) "surplus" show the need to further develop the production base, to improve working conditions, to adjust the estimates for the need for specialists, to improve the wage system for specialists and so forth.

At the same time, in the economy there is a phenomenon of a shortage of skilled manpower, of specialists in a number of new specialties and so forth. Thus, annual losses due to the delayed development of new production capacity are

12-14 billion rubles a year, including almost 2 billion rubles due to the delayed training of a skilled labor force [6]. Under these conditions one need not speak about a surplus of education.

In this context of interest are the data on the ratio of the dynamics for the education of persons employed in the national economy and fixed capital (see the table).

Table

Growth Rates of Material and Nonmaterial Forms  
of Society's Wealth, %

	1960	1970	1979
Fixed capital of national economy (minus housing)	100.0	234.0	469.0
Capital-to-labor ratio for one employee in the national economy (without housing)	100.0	201.0	345.0
Value estimate of amount of education of persons employed in the national economy (in comparable prices)*	100.0	165.0	279.0
Average amount of education for one worker in the national economy	100.0	141.6	205.0

\* Calculated from published data of 1959, 1970 and 1979 censuses.

From the table it can be seen that the growth rate for the capital-to-labor ratio of employees has greatly outstripped the educational rate. And the gap in the ratio of these indicators has been growing. While in 1960, the ratio of the educational rate to the capital-to-labor rate of one employee in the national economy was 0.54, in 1970, it was 0.39 and in 1979, 0.32. The same trends are characteristic also for material production [6].

However, it is far from just a question of the growth of the quantitative indicators. Under the conditions of switching the economy to an intensive path of development, of equal importance are the qualitative aspects of education's development.

Let us examine the structure of society's educational potential which in 1979 was valued for the entire population at 1.844 billion accumulated man-years of education and 1.316 billion for employees. In comparison with 1959, the educational potential rose, respectively, by 2.1 and 2.2-fold. Here the average educational level of one employee rose from 6 to 9.8 years. Over the 20 years there was a sharp change in the structure of the educational potential of employees.

The share of higher, incomplete higher and full secondary education has risen from 34.7 to 67.9 percent. The share of an incomplete secondary education has declined from 32.6 to 22.8 percent and that of a primary and below-primary education from 32.7 to 9.3. Here the number of employees with a low educational level



has also declined substantially in absolute terms. These processes have occurred as a result of the changing generations of workers. The older generation with a low educational level has been replaced by young persons for whom a complete secondary education is a necessary minimum corresponding to the demands of the modern national economy.

It should be pointed out that the share of a general secondary education in educational potential over the 20 years has increased by almost 20 points (from 10.7 to 30.6 percent) and this shows a rise in the role of this type of education in society's development.

The socially necessary minimum of knowledge without which it is impossible to carry out the major social tasks and have many types of production function has been constantly growing. For this reason, society will endeavor to involve the population in an ever-higher level of education. At the beginning of the 1930's, the problem of a universal primary education was solved; at the end of the 1950's a transition was made to a compulsory 8-year education and at present to a complete secondary education.

The role of general education in developing the abilities of the students, creative thinking and in mastering a scientific approach to the assimilation of information is hard to overestimate. At the same time broad general education should be combined with greater special training and an improvement in labor indoctrination. This creates a basis for moving from one-time to continuous learning over the entire life of a person. The constant changes in the conditions of labor and in the environment and the ongoing scientific discoveries which frequently lead to revolutionary transformations in the system of material elements of the productive forces have contributed to a rapid rise in the flows of information. A person must constantly make his way through these changes; he must rapidly perceive new knowledge and contribute to its further updating, to the development of production and to improving all elements of his labor activities. For this reason the acquiring of knowledge and their use should become an ongoing process. The clearly expressed focus of education on the future requires in the educational process that consideration be given to the basic patterns and prospects of society's development.

However, a physical assessment of this potential is not enough. It is also essential to know its value estimate. This makes it possible to incorporate educational potential in national wealth and correlate the growth of the material and nonmaterial elements of it. A change in the estimate involves the action of primarily three factors: 1) the increased level of education (each subsequent stage of education requires greater expenditures); 2) the increased quality of education (the increased expenditures on wages, the increased technical equipping of the educational process and the creating of more comfortable educational conditions); 3) a rise in the share of daytime instruction.

Expenditures on education are constantly growing. At the same time, the educational level in monetary terms is growing at a lower rate than the fixed capital-to-labor ratio (see the table). Is such a ratio an optimum one and does it correspond to the current and future needs of society? Possibly the socioeconomic return from the educational potential is so great that there is no need for the more rapid growth rate of education?

Education carries out two functions: social and economic. Obviously the educational system is functioning effectively if the fulfilling of both functions is intercoordinated and leads to the maximum possible growth of society's educational potential with the given resources and to its qualitative improvement. The fulfilling of the economic function to a certain degree can be assessed quantitatively. But an assessment of the social function has basically a qualitative nature, although it also can indirectly be measured in quantitative terms. As is known, for carrying out both functions on the socially necessary level, there must be the corresponding coverage of the population with a certain educational level and the rational availability of material, labor and financial resources. The reaching of norms for the use of resources characterizes definite standards of instruction. However, a normed approach is not sufficient for assessing the development of education. It is essential to find indicators which reflect the impact of education on the development of the individual and society. To reduce this impact merely to disclosing the influence of the educational level on the increase in national income, as is frequently done in the economic literature, is wrong since the qualitative aspects of such an impact are overlooked. The establishing of just the indisputable quantitative successes does not provide an opportunity to promptly draw attention to certain negative phenomena basically of a qualitative nature which can accompany a growth of the population's educational level.

The mass coverage of the population in an ever-higher educational level, that is, universal secondary education, an increased number of students and the broad development of vocational education, leads to an increased national economic effect. At the same time, the greater mass nature of these services can be accompanied by a number of consequences which retard the rate of return from educational expenditures. Their prompt elucidation is one of the major reserves for increasing the effective use of society's educational potential. For this reason, it is essential to analyze the various indicators which reflect the state of affairs in the educational system.

One such indicator on the level of higher and specialized secondary education is a determining of the degree of conformity of personnel training to social needs. For this, it is essential first of all to know the norms for the saturating of the national economic sectors with specialists and to work out plans for training them considering the particular features of national economic development over the long run. However, this work has been done extremely slowly. From 1978 through 1982, the sectorial procedural instructions on determining the needs for specialists were worked out in 69 out of the 87 ministries and departments while saturation norms were worked out in 10. In the Union republics these indicators were worked out in only 8 out of the 120 ministries and departments [9]. As a result, the need for specialists has often been unsoundly overstated and at the same time phenomena have been observed as the incorrect use of specialists, a falling behind of the need to train specialists for acutely essential specialties, shortcomings in the allocation of specialists and so forth. Mistakes have also been observed in the quality of personnel training for the national economy. The use of scientifically sound normative documents in determining needs by all ministries is a major reserve for increasing the effectiveness of the educational system. The system of higher and secondary education is confronted with the tasks of further improving the educational process and its planning and providing greater focus on the achieving of end results [10].

In recent years evidence has appeared of unfavorable trends in the sphere of primary school education.

The educational system is basically run by the USSR Ministry of Education, the Committee for Vocational-Technical Education and the USSR Ministry of Higher and Secondary Special Education. The VUZes are run by 73 departments and the specialized secondary schools by 220 departments [8]. The PTU are also under numerous departments. The multiple subordination has led to discrepancies in the system's development. In particular, this has been expressed in the fact that the demands of the VUZes on the level and quality of knowledge have not been met by the primary school. Compensation for the lack of school knowledge frequently rests completely on the higher education system. In other words, the elimination of the negative phenomena rests not on the element which caused them (in the given instance, the primary school) but rather on other elements, thereby increasing their functional load. Such an increased load can over time lead to a decline in the quality of education in these higher levels.

The question arises: why with the significant investment into education do such phenomena occur which reduce the effect of the system as a whole? Some of the reasons lie in the departmental approach to planning, and the low focus on the end results of the various educational elements.

At the same time there is a problem which, in our view, has still not been given proper treatment in the economic literature. This is the question of the effect of mass education. Unconditionally, this is always a positive one under the conditions of socialism. However, a mass education gives rise to a number of new problems. This involves primarily the elements of the system which produce the complete secondary and vocational-technical education, that is, the school and the PTU.

The students in schools are extremely diverse in terms of the level of abilities. However, each student should assimilate a socially necessary minimum of knowledge and this has been constantly growing and becoming more complex. At the same time special attention must be given to the most gifted portion of the youth. The formal fulfillment of these tasks can involve a number of negative phenomena: a) the addition of nonexistent knowledge in the educational sphere and which can be compensated for only by repeated instruction with a great loss of time and economic effect; b) the loss of a portion of society's intellectual potential even on the school level.

The 26th CPSU Congress paid particular attention to the need to improve the quality of instruction. These questions were widely examined also at the June (1983) Plenum of the CPSU Central Committee. The draft "Basic Directions for Reforming the General Educational and Professional School" approved by the April (1984) Plenum of the CPSU Central Committee is a major document which realizes the decisions of the 26th CPSU Congress and the program ideas of the June (1983) Plenum of the CPSU Central Committee on the need for a further improvement in the public education system.

This document aims at bringing the system of general and professional education, the entire aggregate of educational work, political, labor and moral indoctrination of the younger generation into accord with social needs. The real ways for



improving education as outlined in the party document are based upon a profound analysis of the existing situation and upon an elucidation of the achievements and shortcomings in the work of the general education school and the PTU.

An improved quality of instruction, the converting of the schools to 11-year instruction from the age of 6, improving the structure of instruction in the various schools after 9th grade and the supplementing of a universal secondary education for the youth with a universal professional one will make it possible to carry out the major tasks confronting the educational system. Particular importance in the indoctrination of youth is given to preparing them for labor. "Correctly organized labor indoctrination, training and vocational guidance, the direct participation of school pupils in socially useful, productive labor are irreplaceable factors in developing an aware attitude toward instruction, civil development, the moral and intellectual shaping of the individual and physical development" [3].

The mass education of the population requires additional expenditures, primarily of live labor. The increased expenditures is reflected either in the increased teaching load per instructor with a fixed level of organization and technical equipping or an additional influx of labor resources.

As a whole, the educational level of educators has risen sharply. While in 1960, 65.6 percent of the teachers in the daytime general education schools did not have a higher education, in 1982, 25.3 percent of them remained. But this amount is still high for such a system as education. In the daytime schools 72 percent of the total number of teachers are still women. The relatively low wage level frequently leads to an influx into the inferior educational levels of the less effective resources (the less capable and the less creatively gifted). This cannot help but be reflected in the quality of instruction. Wages in the educational sphere are rising but at lower rates than in many other national economic sectors. The average annual increase rate of monthly wages in the national economy over the period from 1965 through 1982 was 3.65 percent; in industry it was 3.8 percent, in transportation 4.1 percent, in construction 4.0 percent, in trade 3.85 percent, but in education 2.15 percent. In 1965, the average monthly wage in public education was close to the national economic average and 8 groups of sectors out of the 14 for which data are usually given by the USSR TsSU [Central Statistical Administration] had a lower wage level than education; in 1982, there were only 3 such sectors [4].

The Decree "On Raising Wages for Teachers and Other Public Education Workers" approved by the CPSU Central Committee, the USSR Council of Ministers and the AUCCTU is aimed at significantly increasing the wages of educators. In accord with the decree, the wages of teachers and other public education workers as an average will rise by 30-35 percent (considering the increased wage rates and salaries as well as various types of additional payments).

In carrying out the measures outlined in the reform to increase the wages of teachers, to improve their living and working conditions, to better the material and procedural circumstances of their activities and to involve gifted persons in the educational system, it is essential to increase the demands on the quality of their activities. They must carry out the tasks related to educational work and to the labor, political and moral indoctrination of the youth creatively and



on a high level. Each educator must be given an entire range of advanced methods and means of instruction which can be used selectively, depending upon his abilities and skill level. The school must also widely draw on part-time teachers from among the most gifted workers of science, the higher school, art and sports for teaching individual subjects and organizing circles and electives. The experience of D. Kabalevskiy, physicists and mathematicians has shown that phenomenal results can be achieved in the development of the youth if gifted persons are involved who understand the entire difficulty of the tasks confronting them. The best VUZ students, workers, kolkhoz members and athletes should be involved in conducting extracurricular work at the schools and PTU.

We must particularly raise the question of the development of the physical plant for all elements of the educational system and its technical reequipping. An improving of the physical plant under present-day conditions is a basis for a qualitative jump in the development of education.

The basic functions of the physical plant in the educational system are:

- 1) To provide space for instruction and serving the educational process;
- 2) Providing service facilities;
- 3) Creating conditions for the educational process;
  - a) The necessary furniture and supplies,
  - b) Laboratories and their equipment,
  - c) Teaching equipment (TSO),
  - d) Informational means and aids;
- 4) Providing supplies for current use.

Each of these components carries a major load in the educational process. The providing of the necessary rooms creates the basis for an ubiquitous conversion to single-shift instruction and to reducing the size of the groups. Complete construction of buildings with dining rooms, swimming pools, reading rooms creates favorable conditions for work and recreation. Improving the service conditions frees time for instruction. The introduction of TSO creates conditions for intensifying the educational process (that is, more rapid assimilation of the information), for fundamentally altering the nature of assimilating the knowledge, for reducing the labor of instructors in performing secondary functions and improving the labor indoctrination of the youth. All the components of the physical plant are closely interrelated and complement one another. Only with their harmonious development is it possible to create conditions necessary for the all-round development of man and for forming the required personnel.

Under present-day conditions the task of changing the structure of the physical plant of education has moved to the forefront. Here it is a question primarily of the accelerated development of the active portion of the educational capital and primarily the TSO. Their role in instruction is a dual one. On the one

hand, these make it easier for the students to assimilate the knowledge and teach them to use equipment. On the other hand, they ease the job of the instructor, making it possible to free a good portion of the time for performing creative functions, for exercising all-round supervision and so forth.

At present the following have been developed and are employed: automated teaching systems, devices and systems for educational television, language equipment, monitoring devices and trainers; training laboratory equipment. More than 400 VUZes in the nation employ educational television systems. Many VUZes have begun developing automated teaching systems. The fleet of individual-type monitoring and teaching devices in the systems of the USSR and Union republic Minvuz [Ministry of Higher and Special Secondary Education] was more than 40,000 units; 1,300 auditoriums have been equipped with collective use devices. The TSO are evermore widely being introduced in school instruction and in the PTU.

The TSO complement and ease the job of the pedagogue but naturally they cannot replace him. In the hands of the best instructor, the TSO are turned into a powerful means for influencing the teaching process. For this reason, we must introduce not individual instruments and mechanisms but entire systems which help to definitely mechanize the teaching process and improve the assimilation of information. In addition, the radio, television, press and video tape recorders should assume a place in home instruction.

In the currently existing norms for the development of the physical plant of education, one can trace a clearly expressed orientation toward increasing the passive portion of the capital, that is, the area per student and the number of teaching places per 10,000 persons and so forth. Such norms are necessary but are insufficient and in addition they also have their saturation limits. It is essential to work out and introduce norms for the availability of active capital and TSO for instructors and students, norms for the replacement of TSO and so forth. The question of improving the normative base for the physical plant of education has been repeatedly raised in economic literature. However, the problem is being solved extremely slowly.

An increase in size of educational institutions is a characteristic trait in the development of the physical plant at the present stage. This creates an opportunity to build modern buildings with a range of facilities for serving the educational process and with improved conditions for extracurricular time. Under the conditions of concentration, good conditions appear for employing highly effective TSO, modern laboratory equipment and for the rational use of all types of resources.

The development and qualitative improvement of the physical plant creates conditions for converting the educational system to an intensive path of development. Intensifying the educational process on the basis of the achievements of scientific and technical progress means the rational utilization of resources and improved forms for the organization of instruction. This leads to a higher quality of education and helps to provide the socially necessary minimum of knowledge to all students and develop the abilities of the pupils considering their individual abilities. Here a significant gain in time is achieved.

The carrying out of these tasks depends upon linking the physical plant with highly skilled labor resources.

Improving the educational system is one of the most important tasks in the development of a socialist society. The carrying out of this will help to realize the higher goal defined by the basic economic law, and to form the first productive force, man, in accord with the needs of social progress.

The carrying out of these functions by education requires an approach to its development as a single system and a nondepartmental orientation of this to solving the tasks of human development and progress in the productive forces will lead to a higher socioeconomic return. The carrying out of the reform of the general educational and vocational school will help most to improve the qualitative characteristics of society's educational potential.

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## EDUCATION

### PROSPECTS, TRENDS IN PROFESSIONAL TRAINING REVIEWED

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[Article by N. Denisov, candidate of economic sciences: "Higher Education Training of Cadres: "Trends and Prospects for Development"]

[Text] Each stage of development of the productive forces of society involves an appropriate need in regard to level of education and vocational training of cadres. K. Marx wrote: "... the level of skill of the present population is at each given moment a precondition of aggregate production--consequently, the main accumulation of wealth and a very important retained result of prior labor...."<sup>1</sup> Socialist production relations ensure the steady, and the most complete and rational satisfaction of this objective requirement.

One of the modern trends in manpower reproduction is the constant growth of the relative share of specialists and saturation of both the sectors of material production and of the nonproduction sphere with them. For 1960-1980 alone, saturation of our country's national economy with specialists grew more than twofold, constituting 225 persons per 1,000 of the working population.<sup>2</sup>

The training of such a significant number of specialists required a furious growth in higher learning institutions. Table 1 shows how the number of higher educational institutions and the numerical size of the students and the professorial-instructor staff has increased.

Such a significant growth rate of higher learning institutions during this period was quite justified. Numerous positions requiring a higher education were staffed by practical workers. The number of workplaces grew rapidly both in material production and in the nonproduction sphere. All this established a large additional need for specialists with a higher education and brought on a corresponding development of higher learning institutions.

At the present stage of development of our country's national economy, intensive-growth factors have a governing significance, which has been repeatedly emphasized in documents of the CPSU and the Soviet government. This also fully applies to continued development of the higher education.

Table 1. Dynamics of Development of USSR Higher Learning Institutions  
During 1966-1982

	1965/66 school year	1982/83 school year	Growth, %
Number of higher learning institutions	756	891	117.9
Number of students in them (thousands of persons)	3,860.0	5,315.2	137.7

■ Compiled from "Narodnoye khozyaystvo SSSR v 1982 g." [USSR National Economy in 1982]. Moscow, 1983, p 462.

At the present time the potential of higher education has been established, making it possible to supply the economy with specialists of any type. Consequently, the necessity for expansion of the VUZ network disappears entirely. Such a need, however, is to a certain extent still present in the eastern regions of the country where in accordance with the decisions of the party and the government, provision has been made for accelerating growth rates of productive forces.

The growth of the quantitative indicators of secondary schools in the preceding period is generally characterized by the lack of specialists with a higher education in all sectors of the national economy. It has been possible to significantly reduce this lack of specialists. True, in many sectors the number of practical workers is still great. But many of them are older than 40 and work in positions where a large amount of practical experience is primarily required, making it possible to a certain extent to compensate for an inadequate level of education. The fact that a number of positions are not filled by specialists is often due to unwillingness to work at a given place because of disparity between work conditions and remuneration, and the existing working conditions, which limit the potential of utilizing the knowledge and abilities of the VUZ graduates.

Study of trends and factors of change in the need of the national economy for specialists with a higher education shows that over the long term the growth rate of the number of suitable corresponding will be low. Intensification of production has resulted in a continuous reduction in the growth rate of the number of managerial and specialist positions in industry. These changes are particularly obvious with respect to such a category of personnel as directors of independent enterprises, chiefs of shifts and their deputies, heads of shops, work bays, sectors and shop foremen. For example, in the RSFSR, according to our calculations the number of suitable positions increased by 17,200 and during 1971-1977--by only 7,600. According to our estimates, that take into account the future expansion in the development process of material production, and which has been targeted in the decisions of the party and the government, this trend will be retained in the future.

The rise of "science intensiveness" of production necessitates the constantly growing share of planning and design work in production. During 1965-1982, the number of planning and design organizations grew considerably. This resulted in an increase in the number of positions for engineers employed in such organizations. For some time, this determined the lack of staff for the said positions and the high need for an influx of young specialists. During this time the number of scientific personnel more than doubled, in 1982 reaching 1,431,700 persons.<sup>3</sup> The need for an increase in the number of specialists of these categories will continue into the future. But in recent years, a tendency has been observed for a certain stabilization of the number of corresponding positions in scientific and planning organizations. It is clear that the period of extensive development of these institutions is now behind us. Today they need to be oriented to better utilization of the existing labor potential at their disposal. It follows that the additional need for these specialists will not be significant in the future.

The number of positions requiring a higher education will grow somewhat in sectors of personal and social-cultural services, especially in regions with significant growth of the population. Such a trend will also be observed in agriculture. But on the whole, this will have an insignificant effect on the dynamics of the national economy's need for specialists with higher education.

The great additional need for specialists determined on the basis of requisitions of ministries is largely due to instances of a general lack of balance between work place and the available number of workers and their educational and qualifications profile. Furthermore, imbalance existing between additional need for workers and the possibilities of satisfying it are significantly higher than for specialists. Moreover, requisitions of ministries are frequently do not reflect the genuine additional need for specialists with higher education, since requisitions are formed on the basis of the staff size of enterprises. As a rule, the need of the ministries for specialists is overstated because of eliminating technician and auxiliary personnel positions.

It would appear that these deficiencies, characteristic of the existing methodology of planning specialist training, could be avoided if one were to proceed from the expected manpower structure.

A comparison of the distribution figures for youth in different training tracks with the existing and anticipated manpower structure shows they do not correspond.

In the beginning of the '80s, graduates from the 8th year class numbered 3.7-3.9 million persons. Based on the admission [data] of youth to higher and secondary specialized educational institutions, it can be assumed that about 1 million of them will obtain a higher education and 1.2 million a secondary specialized education. Thus the existing structure of the education system is oriented toward the training of almost 1.5 specialists calculated against 1 person going into the national economy as a worker. This is also confirmed by the fact that in the course of the two first years of the 11th Five-Year Plan, the number of specialists grew by 2.4 million and that of workers by only 1.6 million persons.<sup>4</sup> At the same time according to data for 1980<sup>5</sup> the share of

specialists in the manpower structure of the country's national economy amounted to only 25.4 percent, including those with higher education--to 10.7 percent. No basis exists for assuming that the situation will radically change over the next 20-25 years. According to our estimates, even in such a remote possibility, the relative share of specialists with higher education in total manpower should not exceed 20 percent. Thus even while taking into consideration the practicability of using a part of the specialists in the work place, the middle level of specialized education of the present generation of youth is considerably higher than required.<sup>6</sup>

The forecast of the demographic situation shows that it is also quite unfavorable for increasing the numbers of trained specialists with higher education. The block of youth aged 16-17 is significantly decreasing during the 11th Five-Year Plan. And although in subsequent years its numerical size will grow somewhat, reduction of the number of persons graduated from secondary school in the preceding period will make the demographic situation sufficiently difficult for higher education during the next five-year plan as well--at any rate in most of the union republics.

From what has been described, it clearly follows that in the immediate future, the transition of higher education from extensive to intensive development will have to take place in a very short period. This stage of its development will be characterized by the stabilization or even reduction in, for example, of such an important quantitative indicator like the number of students in VUZ's. The task to put the process of reproduction of specialists with higher education into more complete accord with actual requirements of the national economy both in a sectorial and in a regional context is paramount. This will make it possible to stress IMPROVED QUALITY OF SPECIALIST TRAINING. Stabilization of the network of VUZ's and the number of students, a qualitative growth of the professorial-instructor staff, expansion of the material base and improvement of the technical equipment in existing educational institutions will create all the necessary conditions for the successful solution of this task.

In examining the work of higher education and the process of reproduction of specialists in the context of individual groups of specialists, it should be noted that their availability to different sectors is most uneven. Quantitative need for engineers and technicians is basically provided for, which, it is true, does not exclude that there is a lack of them in some specialties and regions.

As pointed out above, this problem has been solved to a lesser degree in sectors of the nonproduction sphere and agriculture. Let us examine the availability of specialists to these sectors using the Russian Federation as an example.

In recent years, saturation of the republic's agriculture with specialists has grown significantly. But it is still low both in absolute size and in comparison to other sectors. According to our calculations, there were only 26 persons with higher education per 1,000 persons working in 1980 in agriculture of the RSFSR. Many positions have been filled with persons without an appropriate education: they, according to our estimations,



represent 26.4 percent among kolkhoz chairman and sovkhos directors, 55.4 percent among agronomists, 62.8 percent among livestock specialists, 42.4 percent among chief engineers and 94.2 percent among heads of animal husbandry farms. At farms of the RSFSR Nonchernozem Zone every third person occupying a position supposed to be held by engineers or technicians is a practical worker.

The scale of agricultural-specialist training is characterized by high indicators. It is enough to say that for the group of "agricultural and forestry" specialists, VUZ's graduated 34,900 specialists and secondary specialized education institutions--79,000 specialists.

The problem of providing agriculture with specialists (while taking into account, of course, natural attrition) in many regions could be solved in the course of a single five-year plan. But in the last three years their availability has actually grown in some oblasts. Many agricultural specialists have gone to work in other sectors; the agricultural administrative apparatus, and organizations serving rural areas have been growing at an accelerated pace, increasing their staffs.

It may be expected that in the immediate future the outflow of specialists with higher education from agriculture will be less intensive as a consequence of the leveling out of living conditions in town and country and the gradual saturation of cities with VUZ graduates. But while taking this into consideration, all existing positions for persons with higher education will likely be unoccupied in the present and next five-year plans. Taking into account the weak saturation of this sector by specialists, a quantitative growth in the number of corresponding positions may be anticipated. For this reason, the additional need for agricultural specialists will be sufficiently high for a long period, which at the very least will result in reducing the existing levels of specialists trained at higher educational institutions.

The need for this is confirmed by a comparison of the agriculture of the RSFSR and other republics. The Russian Federation numbers significantly fewer agricultural specialists with diplomas per hectare of plowland, per thousand head of cattle and so on, than in Belorussia and the Ukraine. In positions supposed to be held by specialists with higher education on farms of the RSFSR, the share of practical workers is significantly higher. Among persons working in the republic's agriculture in 1980, only 2.6 percent had a higher education, while this indicator equaled 4.9 percent for the USSR as a whole.

The present stage of development of our country is characterized by the outstripping growth of sectors in the nonproduction sphere. Taking this into account, an increase in the need for specialists is expected here over the long term.

Their availability is not the same for different specialties. Our country has achieved a rather high saturation of physicians: there are 40 physicians per 10,000 persons, which is 1.8-2.0-fold greater than in the United States and other developed capitalist countries. Taking into account students already admitted to VUZ's, for each 10,000 persons of the population there will be up to 50 physicians, which will make it possible to fully satisfy the needs of

the population including (with maintenance of a proper policy of distribution of young specialists) administrative regions and rural localities lagging in this regard. Thus, in the more remote future, graduations of young medical students should basically only compensate the natural attrition of physicians, while at the present time about 52-55 percent of graduates go toward the increase of their total number. Consequently, during the 11th Five-Year Plan, it will be useful compared to the preceding period to reduce somewhat the extent of the number of physicians trained. It is clear that in the future it will be necessary to reduce admissions to medical VUZ's even more by redirecting more of them to provide advanced training to physicians, which will boost the quality of their training.

A different situation has formed in the process of reproduction of teachers. Thus in the Russian Federation in 1980, VUZ's of the RSFSR Ministry of Education alone produced 70,500 teachers. Several thousand teachers were trained at universities. Such a scale of training would be more than adequate, given the condition of good retention of VUZ graduates in school. But under the existing conditions where a significant portion of teachers works in other sectors of the national economy, schools experience a constant shortage of teachers. A number of factors are in effect at the present time that are responsible for the increased need for teachers with higher education: first, the objective has been stated of providing a higher education to teachers of elementary grades; second, in conformity with the designated reform of the general educational and vocational school, it is already planned to initiate the change during the 12th Five-Year Plan to teach children beginning with 6 years of age. This will bring about a corresponding increase in the number of school children and reduce in the more remote future maximum seating capacity of classes. Consequently, it will be necessary in the immediate future at the very least to retain their former level and subsequently to increase admissions to pedagogic VUZ's. Furthermore, it seems advisable to expand the participation of universities in the training of teachers.

In recent years, the availability of personnel with higher education has improved for other sectors of the nonproduction sphere, but here too a shortage is still being experienced.

The demographic situation existing in the 11th Five-Year Plan has made it necessary to reduce somewhat admissions in the republic to VUZ's for specialties relating to culture, trade, physical culture and sports. But in the future, it will be practicable not only to maintain the existing scale of admissions to appropriate VUZ's but also to increase it for the purpose of overcoming the existing lag of the nonproduction sphere.

The discussed ideas on the vocational structure of higher education, it seems to us, provide the basis for assuming that in the future it will be necessary to carry out here certain structural changes: to gradually reduce the proportion of training of engineers and physicians while increasing the relative share of graduating of specialists for agriculture, the nonproduction sphere and university specialties.

The development of higher education in the regional context is basically determined by three groups of factors:

--allocation of production potential; in conformity with it, specialists are trained first of all for industry, agriculture and the fish industry;

--population distribution over the territory of the republic and its need for services of the nonproduction sphere; taking these factors into consideration, training of personnel is carried out for culture and trade, physicians, teachers and a number of other specialists directly connected with serving the population;

--the existing network of higher education institutions and the state of their educational-material base, as well as the supply of highly trained instructor cadres.

For the most part, as a result of a purposeful policy of siting higher education institutions over the entire inhabited territory of the country, the training of specialists in the regional cross-section meets the necessary requirements. The increasingly uniform distribution of VUZ's has a positive effect on regional availability of specialists with a higher education, contributes to the equalization of the cultural level and growth of the intellectual potential of the population of formerly backward regions and makes it possible to better satisfy the social need of youth for education. On this plane, two undoubtedly positive trends should be singled out: the gradual reduction of the role of Moscow and Leningrad in training specialists, and raising the level of indicators for higher learning in the republics of Central Asia to a union average.

In addition, it appears advisable to carry out certain changes in the regional structure of higher learning institutions. At the present time, the training of engineers is to a significant degree concentrated in VUZ's of the RSFSR and the Ukraine. In the total number of students in RSFSR VUZ's in 1980, the relative share of those studying in specialties relating to industry, construction, transport and communications amounted to about 50.7 percent and in the other union republics to 38.6 percent (Table 2).

At the same time, the relative share of students training in the RSFSR for its own needs is lower than in VUZ's of other union republics. Such a situation was fully explainable in those years when higher education of many union republics was weak. Within certain limits, especially with respect to rare and unique specialties, such a position is justifiable even today. But on the whole, the existing regional structure of training specialists with a higher education now no longer fully corresponds to the needs of the national economy nor with the capabilities of higher learning institutions of the other union republics.

As a secondary phenomenon, the given situation has resulted in the Russian Federation occupying one of the last places in regard to saturation with specialists trained for its own needs (education, agriculture, culture and so on). Thus among teachers of RSFSR schools, including Moscow and Leningrad,

the share of those having a higher education at the beginning of the 1980/81 school year amounted to 69.3 percent, in Belorussia to 73.8 percent, in the Ukraine to 78.8 percent and in Estonia to 72.5 percent. Thus it appears to be necessary to reduce the share of the RSFSR in training of engineers and to boost the relative share of specialists, trained in the republic for its own needs.

Table 2. Breakdown of Students in Higher Educational Institutions by Sectors in 1980 (in %)

Sector of national economy	RSFSR	Other union republics
Industry, construction, transport and communications	50.7	38.6
Agriculture	9.2	11.6
Education	25.0	34.2
Health care, physical culture and sports	6.8	7.8
Other sectors	8.3	7.5

Another very important question of regional development of higher learning institutions is specialist saturation of the country's eastern regions, the priority development of which was determined by decisions of the recent CPSU congresses.

At the present time, higher learning institutions of the eastern regions has caught up with the other regions of the RSFSR in regard to quantitative indicators. Thus, according to our estimates, the number of students per 10,000 population of student age, is at the present time higher here than for the RSFSR as a whole (excluding Moscow and Leningrad).

The great extent to which the social need of Eastern region youth have been provided with higher education, is shown by the fact that the percentage of 10th year class students continuing their education at VUZ's upon completion of secondary school, is higher in these regions than for the republic as a whole (for the entire RSFSR--18.1 percent, for Western Siberia--21.1 percent, Eastern Siberia--22.4 percent and the Far East--22.0 percent).

Nonetheless it is necessary, however, to take into consideration that the training of specialists for the most developed sectors in the eastern regions and the most promising sectors of the national economy is still to an unjustifiably large degree concentrated in the European part of the country. Thus Siberia in 1980 provided 52 percent of All-Union production of petroleum and almost 37 percent of gas. Its share will grow even more in the future. Nevertheless the extent of training of petroleum and gas procurement people in



the VUZ's of Siberia is modest even on a republic scale. Siberia, occupying a leading place in the timber, wood processing and pulp-and-paper sectors and possessing more than half of the all-union resources of commercial timber, out of 3,400 students for the republic as whole, it graduates from its VUZ's about 600 specialists in forestry and forest engineering science. The graduation of specialists in the group of specialties known as "Development of Useful Minerals" and specialists for transport, chemical technologists and a number of others is below Siberian requirements. Despite the increased need, the provision of the eastern regions with physicians and specialists for the nonproduction sphere is below the average indicators for the country and the republic. In this connection, a gradual regional structural reorganization is needed in training of specialists for certain essential branches of the economy of Siberia and the Far East, as well as of certain sectors of the nonproduction sphere over the long term.

In sectors of the nonproduction sphere and agriculture, the supply of specialists is observed to be higher in oblasts where VUZ's of the corresponding profile are located. Thus in Yaroslavl Oblast in 1981 there were 43.0 physicians per 10,000 of the population, in neighboring Kostroma Oblast the figure was 31.3 and in Vladimir Oblast--32.7; in Astrakhan Oblast--57.6, in Kuybyshev Oblast--41.4, but in Ulyanov Oblast--26.8 and Penza Oblast--26.4.<sup>9</sup> The stabilization of the body of students in the coming period will not make it possible to solve this problem through the creation of new VUZ's (except for the territories of the eastern regions of the RSFSR which have prospects of accelerating development. In such a case it would be necessary to reduce admissions into existing higher education institutions, aggravating thereby the negative consequences of the fact that the majority of them prepare specialists for each specialty in quantities significantly less than optimal. Moreover, such a solution of the problem is connected with the process of building and starting the educational process and requires large specific expenditures for the training of each student while providing a low quality of training of future specialists in the initial period. For this reason, it is necessary to take a more simple and rational route--to redistribute the flows of VUZ graduates in favor of oblasts with the highest shortage.

But experience shows that turnover of specialists (especially in rural areas) sent to other oblasts is high. In the solution of these problems useful experience has been accumulated. Thus at medical institutes of many cities, more than 2,000 young men and women study who have been sent here from districts of Kirov Oblast. Their return home on completion of a VUZ to a significant degree solves the problem of providing the oblast with physicians. Kostroma Agricultural Institute admits a part of students directly from Kaluga Oblast and on completion of the VUZ sends them back home. It would appear that such a form of purposeful allocation of a certain number of places for graduates of oblasts where specialists of the required skills are not trained, meets present requirements of the purpose of higher education, and [such allocation] must find universal support and wider dissemination.

A necessary condition of high-quality training of specialists with higher education is the presence of a professorial-instructor staff of the required skill level. In recent years, provision of higher school with professorial-

instructor cadres has significantly improved, which has had a positive effect on its work. But this problem remains present. It is enough to say that according to data for 1980, in RSFSR VUZ's 40.4 percent of heads of departments are doctors of sciences, while the relative share of instructors with academic degrees is 46.7. The same indicators for the eastern regions of the RSFSR respectively are only 18.0 and 36.6 percent. RSFSR pedagogic VUZ's are poorly supplied with instructors with top training. In 1980, share for doctors of sciences among instructors was 0.6 percent, that of candidates of sciences--28.6 percent. The same applies to cultural VUZ's (0.1 and 10.1 percent, respectively).

Further development of higher learning institutions of the eastern regions of the RSFSR and improvement of the quality of training of specialists will require even in the immediate years ahead, an improvement in the training level of the professorial-instructor staffs of local VUZ's. This question is one of the most acute. To solve it, it is necessary to adopt special organizational measures aimed first of all at improving the availability of housing to specialists.

We have examined in this article problems of the material base of higher education, and improvement in training of students. Let us only point out in conclusion that higher education faces complex problems: it is necessary to raise the level of training of young specialists and to bring the professional and regional structure of VUZ's into a more complete accord with the needs of the national economy. The accumulated potential of higher education makes it possible to believe that over the long term these problems will be successfully solved.

#### FOOTNOTES

1. Marx, K. and Engels, F., "Sochineniya" [Works]. 2nd ed., Vol 26, Part 3, p 306.
2. See: Yevdokimova, L.N. and Kirichenko, I.V., "Ekonomicheskaya rol' obrazovitel'noy podgotovki trudovykh resursov" [Economic Role of Educational Training of Labor Resources]. Moscow, 1983, p 18.
3. See: "Narodnoye khozyaystvo SSSR v 1982 g." [USSR National Economy in 1982], p 89.
4. See: Turchenko, V., "The Prestige of the Vocational and Technical School." --PRAVDA, 17 February 1984.
5. "Narodnoye khozyaystvo SSSR v 1982 g.", op cit, pp 364, 368.
6. Unfortunately, the question of the vocational and educational structure of persons employed in the national economy over the long term has been little studied, as a result of which sufficiently strict criteria of the proportions of the various forms of education and vocational training of youth are lacking. It would seem that the solution of this question, one of the central ones in the program of scientific-technical progress, and

its social-economic consequences for the future requires organization of comprehensive research with involvement of considerable scientific resources.

7. See "Narodnoye khozyaystvo RSFSR v 1981" [RSFSR National Economy in 1981], 1981, pp 303, 304.
8. Here a change is needed in the content of their study, with account being taken not only of their use in traditional spheres of employment but also on a broader scale in the administrative-managerial apparatus and the service sphere.
9. "Narodnoye khozyaystvo RSFSR v 1981 g.", op cit, p 272.

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## EDUCATION

### FINANCIAL ASPECTS OF SCHOOL REFORM EXAMINED

Moscow FINANSY SSSR in Russian No 7, Jul 84 pp 10-16

[Article by RSFSR Honored Economist S.M. Aleshin, deputy chief of Culture and Health Financing Administration of the USSR Ministry of Finance: "The Reform of General Educational and Vocational School and Finance Organs"]

[Text] The April (1984) Plenum of the CPSU Central Committee approved the "Basic Directions of Reform of General Educational and Vocational School," that were refined to take into account proposals and comments that had been received in the course of a nationwide discussion. The Plenum fully supported the program positions and conclusions relating to issues of educational reform contained in a speech at the Plenum by General Secretary of the CPSU Central Committee Comrade K.U. Chernenko, and indicated the need to put them at the foundation of party, soviet and economic organs, public organizations and labor collectives.

At the April Plenum of the CPSU Central Committee, General Secretary of the CPSU Central Committee Comrade K.U. Chernenko noted that: "The reform will create conditions for the joint development of the entire system of public education. Including, of course, higher education, which significantly influences the rate of our economic, social and spiritual progress and the defense capability of the country as well."

The first session of the 11th Convocation of the USSR Supreme Soviet held in April 1984 discussed and approved the "Basic Directions of Reform of General Educational and Vocational School." The Presidium of the USSR Supreme Soviet and the USSR Council of Ministers were instructed to prepare proposals on submission of changes to Fundamentals of Legislation of the USSR and the Union Republics on public education and other legislative acts of the USSR stemming from the "Basic Directions of Reform of General Educational and Vocational School" and the USSR Council of Ministers--to work out and adopt decrees on concrete questions providing for step-by-step implementation of the school reform.

The reform is intended to improve the efforts of the general educational and vocational school to a qualitatively new level, to eliminate defects existing in its operation and to ensure that pupils master the fundamentals of science, the formation in them of solid communist convictions and inculcation of love



of work, moral purity, love for the Motherland, readiness to defend it and proletarian internationalism. This makes it possible to radically improve the labor education and vocational orientation of pupils and training of qualified worker cadres at vocational-technical schools and to supplement universal secondary education of the youth with universal vocational education.

The basic content of the school reform and the chief tasks of ministries, departments, ispolkoms of soviets of workers' deputies and public organizations relative to its implementation in practice are described in a report at the session by member of the Politburo of the CPSU Central Committee, First Deputy Chairman of the USSR Council of Ministers Comrade G.A. Aliyev. He pointed out in particular that the structure of our state and society does not contain an element that would remain aloof to the reform and shut itself off from it with a departmental barrier. Each ministry and department should consider assistance to the school with regard to a broad range of questions as an indivisible part of its everyday activity. This requirement fully applies to the finance system. Finance organs must attentively and effectively approach the solution of questions connected with the school reform, especially since there are to be allotted from the state budget for the implementation of the reform 11 billion rubles of which 3.5 billion rubles per year will be for raising the salaries of teachers and other educational personnel. It is important that these funds be used as designated, economically and rationally and in strict conformance with prescribed procedure. The finance organs must constantly keep track of this, using all forms of control and actively intervene on disclosure of deficiencies.

In the speech at the April (1984) Plenum of the CPSU Central Committee Comrade K.U. Chernenko, in speaking of raising the salaries of educational personnel, pointed out: "It is not simple to secure such a sum from the state budget. But we believe that this is a very correct and wise investment of the people's money." For this reason personnel of finance organs and educational organs, in carrying out the financing of educational institutions, must properly solve questions of allocation and spending of funds.

Six decrees were used in developing the Basic Directions. They provide a wide range of measures and time periods for carrying them out and concern the contents of teaching and education, labor training and vocational orientation of pupils, development of the system of vocational-technical educational, the work of preschool institutions, improvement of training, improvement of the work and living conditions of pedagogic cadres and raising the salaries of teachers and other educational personnel. The contents of these decrees have been made available to all of the country's finance organs by means of appropriate instructive letters of the USSR Ministry of Finance and directives for the practical realization of the measures provided in them. The decrees of the CPSU Central Committee and the USSR Council of ministers were adopted in accordance with the "Basic Directions of Reform of General Educational and Vocational School," approved by the Plenum of the CPSU Central Committee of 10 April and the USSR Supreme Soviet of 12 April 1984. They ought to be adopted for undeviating guidance and use in work on the financing of educational institutions. We shall name the basic measures provided by the decrees that call for significant outlays of budgetary funds.

The decree "On Further Improving General Secondary Education of the Youth and Improving the Conditions of Operation of General Educational School" for carrying out the transition of secondary general educational school to an 11-year period of study and a 12-year period in schools of union republic where the 11-year period of study exists, with children beginning to study at 6 years of age. The following structure of the general educational is being established: 1st-4th year classes--elementary school, 1st-9th year classes--incomplete secondary (9-year) school, 1st-11th (12th) year classes--secondary school. The objectives and tasks of training and educating school children in each of the indicated combinations of general educational school are set out. The USSR Ministry of Education has been instructed to work out in a 3-month period a standard teaching plan for the general educational 11-year school and a procedure of introducing it beginning in the 1986-87 school year, providing in it the following amount of teaching time per week: in the 1st year class--20 hours, in the 2nd year class--22 hours, in the 3rd year class--24 hours (according to the present teaching plan 24 hours per week are specified for these classes), the 4th year class--24 hours a week in place of the 27 at the present time, in the 5th, 6th and 7th year classes--30 hours instead of 29, in the 8th-year class also 30 hours--on the level of the existing teaching plan and in the 9th-10th(11th) year classes--31 hours versus 32 hours. Furthermore, provision is made for study of the Russian language in national schools in 2nd--11th(12th) year classes--2-3 hours per week, for socially useful productive labor of school children in 2nd-4th year classes--one hour per week, in 5th-8th year classes--up to 3 hours, in 9th-10th(11th) year classes--up to 4 hours. Additional hours are also allotted for optional studies amounting to 2 hours per week for 7th-9th year classes and 4 hours per week for 10th--11th(12th) year classes. Annual labor practice for pupils is being introduced through reducing vacation time by a length of 10 days for 5th-7th year classes, 16 days for 8th-9th year classes and 20 days for 10th-11th year classes. It should be kept in mind that despite a certain reduction in the hours of study per week for the basic teaching plan, on the whole, the introduction of the new teaching plan will require additional appropriations, particularly for payment of the personnel responsible for organizing socially useful labor for the school children.

The new teaching plan of the general educational must be well known so that in particular verification of the correctness of wage rate fixing would be conducted at the requisite level and appropriations for the maintenance of the schools is rightly calculated.

The time periods and manner of engaging in labor practice by pupils of the schools are determined by ispolkoms of rayon and city soviets of people's deputies on the basis of local conditions. The transition to the new teaching plan is being carried out gradually in proportion to the creation of necessary preconditions and the transition to study beginning with 6 years of age--in proportion to provision of pupil places, cadres of teachers and educators and extended-day groups basically in 1986-1980. In order to prepare for teaching of children from 6 years of age, studies will be organized in kindergartens according to the program of the first year class with engagement of teachers for this. A portion of the children who have not undergone preparation in kindergarten on the basis of the single program for the first year class will begin to study beginning at 7 years of age according to the

existing elementary-school 3-year teaching plan. The specific time periods for the transition to study beginning with 6 years of age are being determined by city and rayon soviets of people's deputies.

Thus during the transition period the situation will be quite complex: it will be necessary to revise school-estimate calculations, the forms of wage rate-fixing lists and accounting and statistical reporting. This probably will require a certain increase in the number of indicators for this reporting which will need to be adopted temporarily. Finance organs will have to investigate thoroughly the nature of the measures being used and provide on time for their financing while at the same time not permitting excesses.

In senior classes of schools, secondary vocational-technical schools and secondary specialized educational institutions a study is being arranged of fundamentals of electronic computer equipment. Great importance is attached to this. Schools and other educational institutions will be provided with appropriate equipment. Our task is to see to it that appropriations for these purpose are used rationally, as electronic computer equipment is very expensive and should be fully used.

The decrees provide concrete measures for improving the education and training of pupils. Teachers will have broader opportunities in the setting up of the teaching process. In particular, for the purpose of eliminating so-called "percent mania" reporting of schools will be abolished in regard to progress and a rating will be introduced for diligence in study and socially useful labor as well as issue of certificates of distinction for graduates of the 10-year school and silver in addition to gold medals for graduates of secondary school.

For the purpose of boosting teaching effectiveness in school, the maximum seating capacity will be reduced in 1st-9th year classes to 30 persons instead of 40 persons for 1st-8th year classes and to 35 persons in 9th year classes and in 9th-11th(12th) year classes to 25 persons instead of the present 35. The seating capacity of classes and educational groups in boarding schools of the general type will be reduced in 1st-9th year classes from 35 to 30 persons and in 9th-11th(12th) year classes from 35 to 25 persons and in boarding schools for orphans and children left uncared for by parents in 1st-9th year classes up to 25 persons, for educational groups in children's homes for children of school age up to 25 persons and preschool groups in boarding schools and children's homes up to 20 persons. The reduction of the seating capacity is to be done starting with 1st year classes sequentially over the course of 11 years beginning with 1986.

The possibility exists of dividing classes into two subgroups in general educational schools and in boarding schools during lessons of labor training for 5th-9th year classes where the number of pupils is 25 or more persons in city schools and 20 or more persons in rural schools and for 10th-11th(12th) year classes where the number of pupils is 20 or more persons in all schools; at lessons in Russian language and literature in schools using a non-Russian language of instruction in 1st-9th year classes where the number of pupils is 25 or more persons, in 10th-11th(12th) year classes with 20 or more persons;



at foreign-language lessons in 5th(4th)-9th year classes where the number of pupils is 25 or more persons and in 10th-11th(12th) year classes with 20 or more persons.

At the present time, the seating capacity of classes of pupils is on the average for the country significantly lower than the prescribed seating capacity of classes in schools. But in many cities and rayons, it is quite high because of developed circumstances and in a number of cases it exceeds even the prescribed maximum seating capacity of classes. For this reason reduction of maximum seating capacity will exert a significantly positive influence on the organization of the teaching process. Issues concerning the correct filling of classes and schools by pupils has been constantly monitored by finance organs and today they must not be removed from the agenda. However, these questions should be resolved while taking into consideration the adopted decisions on reducing the maximum seating capacity of classes in schools. It should be kept in mind that this measure of all those prescribed by the decrees constitutes one of the most expensive ones and violation of the time periods set by the USSR government could lead to most undesirable circumstances.

The USSR Ministry of Education has been directed to establish in coordination with the USSR Ministry of Finance a procedure for payment of the work of teachers of the 1st-4th year classes of small-staffed general educational schools as well as to examine together with the USSR Ministry of Finance the question of introducing beginning in September 1986 the position of organizer of educational work outside of class and school at all secondary general educational schools. At the present time a full rate for it does not exist at all secondary schools. Provision has also been made for increasing appropriations for remuneration of individuals who head [hobby or special interest] circles, setting it as follows: at schools with 5 to 10 classes in the amount of 0.5 of a teacher's wage; with 10 to 20 classes--at full rate and in the case of 20 or more classes--at 1.5 of a teachers's wage.

As of 1990 the seating capacity of extended-day groups will be 30 persons to a group and at small-staff schools--20 persons instead of the existing seating capacity of groups of 30-40 persons. At the same time, councils of ministers of union and autonomous republics and ispolkoms of kray and oblast soviets of people's deputies are permitted in some cases to create extended-day groups in small-staff schools with a lower seating capacity.

It has been decided to set up under the USSR Academy of Pedagogic Sciences a scientific-research institute of management and economics of public education, to create an All-Union Pedagogic Society and to open in the village of Gorki Leninskiye, Moscow Oblast, an All-Union Museum of Public Education.

A broad and concrete program has been outlined for construction of school, extraschool institutions, institutes for advanced training of teachers and dormitories for them and equipping classrooms, shops, physical-culture gymnasiums and other premises of schools with visual teaching aids. instructional equipment and furniture. This will require large expenditures. The main thing in this matter is not to permit excesses. Higher norms should be established in 1985 for allocations of appropriations for the capital



repair of buildings of schools and other educational institutions. They are proposed to be introduced beginning in 1986. It is necessary to keep track and see that these funds are not diverted for other purposes. I would like to direct attention to the fact that the councils of ministers of union republics have been instructed to ensure the creation in each rayon of services for centralized operational servicing of general educational schools and other educational institutions. Such services exist at a number of places, and the experience of their operation shows that they free heads of institutions from many operational concerns and allow them to devote more attention to the teaching and educational process.

In attaching exceptionally great importance to the radical improvement of labor education, training and vocation orientation of pupils of general educational schools, to preparing them for independent living and establishing in them a realized need for work, the CPSU Central Committee and the USSR Council of Ministers adopted a separate decree "On Improving Labor Education, Training and Vocational Orientation of School Children and Organizing Them for Socially Useful and Productive Labor." Provision is made for the introduction of new programs of labor training. Mandatory socially useful and productive labor is being introduced with allotment of teaching time for this purpose. The USSR State Committee for Labor and Social Problems, the USSR Ministry of Finance and the USSR Ministry of Education are instructed to determine the manner of remunerating the labor of school children in the national economy as well as conditions of remuneration of the labor of personnel performing labor training and vocational orientation of pupils. Extra pay is introduced for one of the schools teachers for organizing labor training, the labor of pupils and work relating to vocational orientation depending on the number of classes in the school. It is proposed to support in every possible way pupils in their public organization for the development of self-service as an inseparable part of labor, moral and hygienic education.

Seating capacity of groups in rural interschool educational-production combines beginning with the 1986/87 school year will be reduced to 20-25 persons. The division of teaching groups at all combines into two subgroups is permitted in the case of the presence of 20 or more persons in the groups in practical training and organization of productive labor of pupils as well as in instruction on motor-vehicle work, work on tractors, typing and fundamentals of office-work management. Budget allocations envisaged for these purposes on the basis of school estimates may be turned over to educational-production combines. Concrete measures have been outlined for the creation at enterprises, sovkhozes, schools and educational-production combines the material basis for the labor training of the pupils: delivery of tractors, trucks, equipment and the like. Outlays for these purposes by enterprises and sovkhozes are quite considerable. For this reason, it is necessary to inculcate in pupils in the course of labor training a thrifty attitude toward these big assets. In carrying out audits, checks and examinations, finance organs should pay attention to correct use of machines and equipment allocated for the labor training of pupils and to adopt measures for the elimination of revealed defects.

The vocational education system has become the basic form of training of qualified cadres. The decree of the CPSU Central Committee and the USSR

Council of Ministers "On Further Developing the System of Vocational-Technical Education and Increasing Its Role in the Training of Qualified Worker Cadres" outlines measures for increasing its role in the transition to universal vocational training of young people. Over the long term, this will result in drawing closer together and uniting general educational and vocational schools, which will incorporate the further development and embodiment of Lenin's ideas concerning the single, labor, polytechnical school. Existing vocational-technical educational institutions will be reorganized in 1984 into a single type--secondary vocational-technical schools with divisions for vocations and time periods of training depending on the educational level of entering students. At these schools, persons who have graduated from an incomplete secondary school will study as a rule three years, while graduates of secondary school with differentiated periods of study--up to a year with consideration being given to their labor training and the complexity of the vocation. Separate groups may also be formed for young people who have not acquired for various reasons a secondary education, affiliates and evening (shift) divisions. Retraining of worker cadres can also be carried out. Benefits, advantages and conditions of material provision of pupils and workers previously established at appropriate educational institutions of vocational-technical education will be retained for the pupils and workers of these vocational-technical schools.

At the same time, taking into account the complexity of this legislation and the presence in it of obsolete norms in a number of cases, the USSR State Committee for Vocational and Technical Education, Gosplan USSR, the USSR Ministry of Finance, the USSR Ministry of Justice and the AUCCTU have been instructed to submit to the USSR Council of Ministers proposals for unification of legislation pertaining to benefits and to conditions of material provision of students and personnel of vocational and technical institutions. During the course of 1984-1985, a list of vocations and specialties should be approved for training of qualified workers at secondary vocational-technical schools, secondary specialized educational institutions, general educational schools and directly in production, which will exclude the possibility of duplication in the training of workers at educational institutions and in production and will raise its level. On the other hand, this also will provide a certain economic effect.

The decree introduces a whole series of new benefits and privileges improving the material provision of pupils of vocational-technical conditions, working and living conditions of personnel. In particular, it is permitted to pay pupils of secondary vocational-technical schools no less than 50 percent of the money earned by them in the period of production training and production practice. At the present time, these sums are paid in such amounts only for some sectors of the national economy. Beginning with 1986, students of vocational-technical school living away from their parents will be provided with food on the basis of increased norms established for pupils of boarding schools; the norms are also increased during the period of students' attendance of health and sports camps. Personnel of these camps are granted subsidies for food in the amount of 50 percent of its cost.

Measures have been designated for strengthening the teaching-material base of vocational-technical schools and other measures for improving their work. Considerable sums for these purposes will have to be allocated by ministries and departments from their own capital investment. Vocational-technical educational institutions are financed from republic budgets of the union republics. They have no direct contact on questions of financing with local finance organs. But local finance organs for the place of location of the schools will have to participate more actively on requests of finance ministries of union republics and on their own initiative in checks of the financial and operational activity of vocational-technical schools inasmuch as finance ministries of union republics do not possess adequate means for carrying out such checks.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Improving Training and Improving the Qualifications of Pedagogic Cadres of the System of Education and Vocational-Technical Education and Improving Their Working and Living Conditions" designates a number of significant measures for improving training of teachers, instructors and masters of production training. Pedagogic practice is being introduced for students of pedagogic institutes and pedagogic divisions (faculties) of universities from the 1st through the 4th(5th) year course, that is, throughout the entire course of study. A gradual transition will be carried out at pedagogic institutes for a five-year period of studies for the specialties "Russian Language and Literature," "Native Language and Literature," "History," "Mathematics," "Physics" and "General Technical Disciplines and Labor." Admittance is being expanded at pedagogic institutes and pedagogic schools, including for day divisions. Special attention will be paid to expansion of training of pedagogic cadres for the regions of Siberia, the Far East, the republics of Central Asia, Kazakhstan and other regions of intensive development of productive forces. The USSR Ministry of Higher and Secondary Specialized Education, the USSR Ministry of Education, the USSR State Committee for Labor together with Gosplan USSR and the USSR Ministry of Finance have been instructed to examine the questions of reducing norms for calculating the total size of the professorial and instructor staff of higher pedagogic educational institutions beginning with 1986 and of recording as length of service under scientific-pedagogic work for personnel of pedagogic VUZ's the time of supervisory and pedagogic work in general educational schools, secondary specialized and vocational-technical educational institutions and public-education organs.

Beginning with the 1986/87 school year, students of pedagogic, including engineering pedagogic institutes, pedagogic divisions (faculties) of universities and students of pedagogic schools will be paid a stipend in amounts established for students and pupils studying for mining, metallurgical, petroleum and forestry specialties, that is, it will be raised respectively by 10 and 7 rubles per month. For institutes of advanced training of teachers in which corresponding departments will be created the procedure for remuneration of labor and determination of the number of instructors established for VUZ's and a number of institutes (according to the list determined by the USSR Ministry of Education) will be applied and the right is granted of issuing teaching and methodological material. A number of



other measures have been provided for improving working and living conditions of pedagogic personnel. As a result, the quality of training pedagogic cadres will be quite significantly improved.

For the purpose of further improving public preschool education of children and their all-round development and preparation for study at school, the decree of the USSR Council of Ministers "On Further Improving Public Preschool Education and Preparation of Children for Study at School" requires the USSR Ministry of Education and the USSR Academy of Pedagogic Sciences to work out and introduce in 1984-1985 a model program of training and education of children in kindergartens and to establish a statute on children and make it effective as of 1 January 1985 in all preschool institutions regardless of their departmental subordination. New institutions "school--kindergarten" will be opened in rural localities and transportation of children will be provided to children's preschool institutions. Children's institutions under education and health-care organs will be patronized by industrial and agricultural enterprises, institutions and other organizations. Measures are also designated for providing construction plans of buildings for children's preschool institutions.

As of 1 July 1984, feeding norms of children at children's preschool institutions are raised by 10-15 percent. A natural assortment of food products has been established. At the same time, in case of a lack of the necessary assortment of products, it is permitted to replace them in accordance with the Product Substitution Table approved by the USSR Ministry of Health, and coordinated with the USSR Ministry of Education. Such replacement naturally must not be of a mass character inasmuch as the Ministry of Trade, the Central Consumer Cooperative Union, councils of ministers of union republics and ispolkoms of local soviets are instructed to ensure the uninterrupted supply of children's preschool institutions with high quality food products in the necessary quantity and assortment. Special attention must be given to observance of established norms of nutrition at children's preschool institutions by finance organs when conducting audits and checks. It is necessary to see to it that parents note the improved nutrition of their children and that the significance of this important measure is not reduced because of sluggishness and carelessness of personnel and because of other similar reasons. At the same time, it is necessary to direct attention to correctness of organization of feeding of personnel of preschool institutions and collection of appropriate payment for this food from them.

For nurses employed in the training of children of up to 3 years of age and educators of nursery groups of children's preschool institutions and children's homes, a shorter workday compared to the former 6-hour workday (36 hours a week) and an annual vacation lasting 36 workdays instead of 24 are being established as well as for educators of the older groups of kindergartens. In introducing in nursery groups of children's preschool institutions and children's homes the position of educator instead of nurse, earnings for the time of work in the new position at a given institution will not be reduced. These benefits put on an equal footing all personnel of preschool institutions engaged in the upbringing of children.



And finally, the decree establishes new sums of payments to parents for the maintenance of children at children's preschool institutions on the basis of the average aggregate income of the family's members. At the same time, payment will not be at all collected from parents in whose families the average aggregate income per family member does not exceed 60 rubles per month, while the payment of parents having four or more children is being reduced by 50 percent. Additionally obtained funds for payment of parents are fully allotted for expenses relating to the increase of feeding norms of children and the financing of other above-mentioned measures, which must be brought to the attention of all parents. It should be noted that the existing payment scale of parents for maintenance of their children was fixed in 1948. Maximum size of payment was established where total earnings of parents were higher than 120 rubles per month. At the present time, the highest paid parents contribute payment in the same amounts as parents with smaller earnings, which is, of course, unfair. During this time, earnings have grown significantly. In 1960, they amounted to 81 rubles per month, but in 1983 they exceeded 181 rubles and will be higher in the future. Parents should know of this.

It should be pointed out that at children's preschool institutions, the work of accountants is becoming somewhat more complex in determining the size of this payment for each family. But the finance organs should not remain aloof from this matter. It is necessary to rationally organize this work.

Pay will be raised by 30-35 percent for about 6 million public education personnel. The raise will take place sequentially beginning 1 September 1984 and will be completed in 1987. Outlays for this purpose will amount to 3.5 billion rubles computed on an annual basis. This attests to the truly Leninist concern of our party and government for improvement of the material position of parents and other public education personnel. This in turn should have an effect on improving the entire work of education and upbringing of youth and the solution of tasks set by the "Basic Directions of Reform of General Educational and Vocational School."

The decree of the CPSU Central Committee, the USSR Ministry of Finance and the AUCCTU "On Raising the Salaries of Teachers and Other Public Education Personnel: provides for a number of essential changes in remuneration of the labor of pedagogic personnel, which will contribute to keeping cadres and eliminating certain disproportions in the remuneration of some types of work and improving the system of bonus payments and certification. In particular, for teachers of elementary classes the rate is set for 20 hours of work a week instead of 24 hours. Payment is introduced for class supervision by instructors of vocational-technical schools. Probationary groups of teachers and instructors are being changed. Sizes of additional payments for class supervision, checking of notebooks and other types and availability of honorary titles and degrees are being increased. The new conditions of remuneration of the labor of teachers and other public education personnel differ significantly from those employed earlier. These conditions must be well known and strictly adhered to.

Accuracy in the determination of the additional wage fund for raising the rates and salaries of teachers and other public education personnel constitutes one of the main tasks of finance organs. It is also necessary to pay special attention to correctness in the determination of the entire wage fund for educational institutions. Local public education organs with the active participation of finance organs should in a timely way carry out rate fixing, prepare the necessary calculations and ensure the timely payment of salaries. This work should be constantly monitored.

Finance-system personnel will apply all their efforts, knowledge and ability so that measures relating to the school reform are financed in a timely way and the necessary conditions are created in schools and other institutions for implementation of the "Basic Directions of Reform of General Educational and Vocational School". This measure has been approved by the April (1984) Plenum of the CPSU Central Committee and the first session of the 11th Convocation of the USSR Supreme Soviet and the positions and conclusions contained in the speeches of General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet Comrade K.U. Chernenko.

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## EDUCATION

### VOCATIONAL COUNSELING, JOB AVAILABILITY SURVEYS ADVOCATED

#### More Sophisticated Counseling Needed

Moscow SOVETSKAYA ROSSIYA in Russian 7 Aug 84 p 1

[Article by V. Shapkin, director of Scientific-Research Institute of Vocational and Technical Education: "To Help Make A Choice"]

[Text] The selection of a vocation in the life of every individual is to a certain extent the selection of one's future. Let us recall how accurately Karl Marx wrote of vocations: "...They can bring happiness to those who have a calling for them, but they doom to destruction those who adopt them hurriedly, rashly, giving in to the moment." A correct resolution of this vitally important question is not a matter of indifference to the state, for growth of society's creative potential, increased labor productivity and reduction of cadre turnover depend on this. The desirable harmonious combination of the interests of the country and of the individual is meant to be ensured by vocational orientation work.

Who today is engaged in such work? The school, the vocational and technical school, the enterprise and the vocational counseling office or a unit, office, center. A great deal of attention is being given to the problem by party organizations, the Komsomol, trade unions and mass propaganda organs. Particularly now, on the threshold of implementing the educational reform. But is the social effect produced by this work adequate?

Unfortunately, far from always. According to data of the Scientific-Research Institute of Vocational and Technical Pedagogy of the USSR Academy of Pedagogic Science, 40 percent of the pupils wish today to learn highly skilled labor in the field of finance or health care, 27 percent in industry or in transport, 11 percent in the service sphere, 9 percent in construction and only 3 percent in agriculture. As we can see, the vocational plans of the children markedly differ from the real needs of the national economy. And, sad as it may be, the direction is not adequate along which vocational orientation work is conducted.

What do we scientists understand by a valid selection of a vocation? First, if it is done while taking into account the preferences and interests with respect to a specific type of occupation, if vocations are satisfying in

regard to such parameters as earnings, position in society and conditions of labor. Second, if the possibility of a young person and the demands of a given job on the condition of health, level of physical development and psychophysiological characteristics are correlated. And the third condition--the profound realization of the social need for specialties of a specific nature and skill level. Ideally, a valid choice of a vocation means a balanced decision which takes into account all the said circumstances. Does the present system of vocational orientation provide this balance?

The work of the school (and it is the system's chief link) boils down essentially to the fact that the children are acquainted with the world of occupations. They have lessons in labor training and studies in educational-production combines. Excursions to enterprises are most often of short duration, tend to be somewhat ostentatious, and encounters with the personnel of vocational and technical schools often possess the character of an outright campaign. As a result, the ideas of the youngsters concerning production are frequently refuted on encountering reality. Thus, according to data of Leningrad sociologists, among students of vocational and technical schools who have decided to change their vocation, about 30 percent consist of those whose initial selection was made under the influence of stories of teachers about the vocation and excursions to a vocational and technical school!

To a certain extent the right choice of a life course can be aided by the existence in many of the country's large cities of vocational counseling units. In any case, as shown by work of psychologists of the All-Union Scientific-Research Institute of Vocational and Technical Education, among persons who followed the advice of a vocational counselor, only 20 percent subsequently became disenchanted with the choice that had been made. And among those who acted contrary to the advice, only 20 percent remained faithful to the chosen path. Unfortunately, the possibilities of vocational counseling units attached to educational departments are quite limited: they have small staffs and so far little scientific-methodological material, nor do they have at their disposal diagnostic equipment. All this makes the work of the units little productive. Much greater possibilities on this plane are possessed by centers and offices of vocational forecasting at large enterprises and industrial associations, for example, at the Second Watch Plant in Moscow, at Svetlana Production Association in Leningrad and Kommutator Production Association in Riga. They, as a rule, are equipped with modern diagnostic equipment and possess all the necessary information on vocations for which recruitment and training are being carried out at the given enterprise. Unfortunately, at the moment when vocational decisions "ripen", the principal body of pupils remains outside the field of vision of such offices.

Many work occupations make rather high demands on the health condition, physical preparedness and level of development of certain mental functions of the specialist. According to data of the Institute of Gerontology of the USSR Academy of Medical Sciences, approximately 22 percent of the youngsters examined by them were healthy in the usual sense but could not work on heights and about 25 percent could not perform fine precise manual operations. According to the results of a study of the Scientific-Research Institute of Children and Adolescents of the USSR Ministry of Health, about 15 percent of



the youngsters come to vocational and technical schools of the country each year whose physiological capabilities do not meet the requirements made by a given occupation. This is why it is necessary in our view to develop a network of vocational counseling units which, in addition to individual counseling, could serve as kinds of methodological centers and guide the work of schools and enterprises. In other words, the idea suggests itself to create interconnected, rayon vocational orientation associations or complexes. Their operation in turn ought to be guided by a regional scientific-methodological center whose function would include the study, generalization and dissemination of advanced experience both within the region and outside it as well as the collection of data on the effectiveness of the work being done.

The creation of such centers would undoubtedly require considerable outlays. However, economizing on vocational orientation is considerably more costly to the state. As experience from abroad shows, vocational orientation and vocational selection on which roughly 1.5 to 2 percent of the cost of training workers is spent, makes it possible to reduce cadre turnover by almost 50 percent! It seems to us it would be possible to discuss the idea of creating a paid vocational counseling service on the basis of the already-mentioned existing scientific-methodological centers. Actually, if paid legal consultation offices and polyclinics exist, then why not create self-sufficient units that would be equipped with modern diagnostic equipment possessing most effective information relating to the situation of vocational selection? The fact is that the determination of a vocation constitutes one of the basic problems in the life of a person. Detailed study of this question should probably be a subject of special discussion. Traditional approaches to the study and depiction of vocations, and traditional estimation of abilities, as well as appraisal of medical counterindications so far have not been bringing about the desired results.

It is impossible to further conduct vocational orientation work without critical analysis, as well as changing certain customary positions of psychology, physiology and medicine without taking into account the latest data of sociology. We should think of developing and introducing new methods of evaluating the abilities and inclinations of pupils and finally of creating an automated system of acquiring, processing and storing appropriate information and issuing recommendations on the selection of a vocation. In this connection the thought arises of comprehensive research that would take in psychological, medical and biological, socio-economic, pedagogical, and engineering and technical aspects of the problem....

A final item that needs to be mentioned. The most perfect system of vocational orientation would not justify expectations as long as psychological barriers are not removed from a certain portion of parents and their children with respect to working occupations and as long as "oblomovism" does not disappear from our life in children's upbringing. Now, on the eve of choosing one's future, many of them are in essence not ready psychologically for entering working life because they previously did not have any labor obligations, did not take part in the management of household affairs and are not acquainted with family economics. Up to now even school labor training has really not included children in the system of society's economic relations and does not prepare them for an independent life. This is why a portion of

the kids decide to continue studies in secondary school to the 10th year, not because of a big attraction to knowledge but because of a desire to continue their childhood as long as possible and to put off the making of a responsible choice to a later time.

We believe that vocational orientation toward worker occupations is a complex problem. It involves all elements of society, and its success depends on the degree of coordination of the efforts of the most diverse organizations and finally on whether it becomes a state service included in the plans of the country's development or is conducted sporadically on social principles. Our scientists have to make a significant contribution to what it should be.

#### Better Planning for Vocational Guidance

Moscow PRAVDA in Russian 16 May 84 p 3

[Article by I. Tratsevskiy, candidate of economic sciences, university docent, Gomel: "Graduate Students and Seniors: Satisfying Need for Higher Learning Institution to Produce Specialists"]

[Text] I recently met a young engineer I know who according to my information should have been working by assignment in Central Asia. He smiled uncomfortably:

"This is how it turned out. I managed to get a "release" and came back here, settled down. True, not in my specialty, and the result is this", he shrugged hopelessly. "Well, a job one doesn't like is worse than a shrewish wife--you want to leave but can't get divorced."

The situation is really quite typical. Worst of all, it is quite common in our time that a beginner specialist is a priori disenchanted with his occupation. Why does this happen? Vocational orientation of students did not originate yesterday. The successful experience of many VUZ's and educational-production combines is well known.

But these successes are so far of a local character. They are intended to serve as the basis for the creation of that system of vocational orientation which is provided by the school reform. And while the setting up of such a system is an urgent matter, it will undoubtedly take a lot of time.

Meanwhile the coming changes do not at all mean that we can wait for the solution of pressing questions which are quite beyond the capabilities even today of VUZ's, planners and educational organs. For example, research shows that up to now the determining influence on secondary-school graduates in the selection of a specialty has been the advice of parents and relatives. Moreover, these suggestions in most cases direct entrance students to the nearest VUZ, which may not always correspond to the capabilities, inclinations and wishes of the young person. But if a specialty is chosen "to one's liking," [mandatory job] assignment problems begin: the person does not wish to leave his home town. Efforts are then undertaken to obtain the right to

freedom of choice in job location or, on arriving on assignment, to work in such a way that they are "released" to their parents even before the expiration of the 3-year period. This is one of the reasons why an obvious imbalance of specialists has occurred. It is particularly felt in relatively small oblast centers with 2-3 VUZ's where people study both with and without leave from work. Thus in Gomel graduates of the Belorussian Institute of Railroad Transport Engineers work in practically all the industrial, construction and transport enterprises and scientific-design organizations. (It was formerly the only technical VUZ in our city). In Mogilev staff members of the information-computer center include many engineers specializing in road-construction and materials-handling machines and equipment. Light-industry specialists, graduates of a local institute, work at Vitebsk's machine-building plants.

More than 70 percent of the graduates of the economic department of our university stayed at home after graduation, or are returning to their own regions on completion of obligatory work assignments. An oversaturation of the city is already being felt with specialists in labor economics and organization of mechanized processing of economic information. Meantime in nearby Minsk, there is an acute shortage of specialists: enterprises and organizations of the republic's capital are not always able to hire our graduates because of permit restrictions. Young specialists assigned to these enterprises are given "releases" and receive the right to free job placement. The VUZ tries to fulfill the plan of interdepartmental allocation, while departments rescind it. There are frequent instances when ministries and departments turn down their requisitions even before personal allocation. The result is that many VUZ graduates do not work according to their specialty.

What is the solution? First of all, it is necessary to increase the role of regional planning organs, labor committees and departments in the determination of long-term needs of individual regions for qualified cadres. The plan of interdepartmental allocation of young specialists should be tied to the regional one. During the past school year, the Ministry of Chemical Industry and certain other departments assigned oblast cities of Central Asia as a place of work for graduates of our university's economic department, yet they did not allot a single person to subordinate enterprises of Belorussia. Of course, one cannot expect our graduates to remain all their lives with their "requisitioner," especially with one who is not always hospitable.

It is finally time to make broader use of direct cadre contracts with industrial and production associations, ministries and departments. Students should know in advance, as early as the third year, possible locations of their future work and train for it accordingly. Then the importance of practical experience and the content of course and graduates plans will be increased.

Our experience shows that in most cases VUZ graduates try to locate themselves in places where they completed secondary school, tekhnikum or have worked and where their families live. Plant scholarship holders for the most part return to the collectives that sent them for training. Exceptions, of course, are to be found. But they are usually due to the talented nature of the young specialists--here sectorial or academic science begins to claim him--or to



changes in the family situation when, let us say, a female student gets married. Abuses also occur, but they attest only to an insufficiently efficient system of control over the allocation of VUZ graduates.

At any rate, we believe that a VUZ should have the right to certain benefits for graduates coming from other towns who are firmly determined to return to their home areas on receiving their diploma. Why not organize for this a special competition for students on the directions of oblast and city ispolkoms of soviets of people's deputies? Naturally, such a document should serve as a guarantee that subsequently the specialist will be able to obtain work at his place of residence in accordance with his specialty.

I foresee objections: such a procedure already exists, enterprises have the right to send their young workers for training. But the fact is that far from all production associations make eager use of this privilege. As a rule, VUZ's must make big efforts to get hold of "assignees". On the other hand, it is simpler for ispolkoms of local soviets to establish a consolidated list of cadre requirements of the highest qualification.

It is possible to take a different route: on acquisition of a general scientific training, send 3rd or 4th year students to institutes of other cities on an exchange program, in order to complete specialized training, taking into account the needs of enterprises and organizations for the various specialties. Such an approach would make it possible to solve a number of social problems. What is implied here, first of all, is housing and aid to parents.

And finally, some comments about specialties of which there is an acute shortage, such as robotic technology, powder metallurgy, scientific organization and technical rate setting of labor and others. Their situation, if it has changed for the better, is still manifestly inadequate. Here some blame Gosplan, others--ministries, still others--the State Committee for Labor. But we think the truth lies elsewhere. In requisitioning cadres skilled in new technologies and new science areas, we still have not learned how to handle the long term with sufficient precision. This is derived from ideas and comforting rationalizations that have emerged: well, they say -- it does not take long to retrain an engineer with a general specialty. Such notions are stated most eagerly by people who have not had to undergo retraining, but they, on the other hand, easily condemn thousands of others to this.

The solution is in the placement of the entire responsibility for forecasting requirements for acutely lacking specialties with one of the union interdepartmental organs: Gosplan, the State Committee for Science and Technology or the Ministry of Higher and Secondary Specialized Education. It would be provided with rights to check the reliability of sectorial requisitions, as well as manage expansion of training of specialists and their



utilization in the national economy. The opportunity would be offered to temporarily change admission requirements for the purpose of ensuring an influx of the most capable youth.

Naturally, it is not simple to coordinate the plan for admission and release of VUZ graduates with urgent sectorial and regional requirements and not to lose sight of the social side as well as to constantly keep track of fluctuations in cadre orders. And the proposals made today naturally do not exhaust the problem. At the same time these questions have been under discussion a long time, but no concrete answer to them has been forthcoming from even a single responsible organ. True, they say that a "conceptual approach" has been practically developed to the solution of these problems. But it would be nice to finally get more precise information on the true state of affairs.

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## EDUCATION

### EVENING, CORRESPONDENCE SCHOOL TRAINING PROBLEMS CITED

#### On-Job Specialist Training

Moscow SREDNEYE SPETSIAL'NOYE OBRAZOVANIYE in Russian No 6, Ju 84 pp 41-43

[Article by M. T. Gromkova, chief of the Evening and Correspondence Instruction Laboratory of the NMK [Scientific-Methodology Study Center] for Secondary Special Education, USSR Minvuz [Ministry of Higher and Secondary Specialized Education], under rubric "On-the-Job Instruction": "The Training of Specialists on the Job"]

[Text] Approximately 37 percent of the student body in the secondary special school system is made up of students in the correspondence and evening educational institutions, departments, branches, and UKP [training-consultation stations]. On-job instruction not only provides secondary special education and raises the proficiency level of the work in the same specialty, but also resolves social tasks involving the employment rate of young people during the time when they are not working.

One must also consider to be a merit of the correspondence and evening forms of instruction the fact that a person who has received an education while remaining on the job rarely changes his occupation. The knowledge that he has acquired is not abstract, but, rather, is a concrete kind of support for his experience in labor and human communication in the production collective. A factor of no small importance in the spectrum of the on-job qualities of the specialist is the ability that he has acquired for working independently, which ability is so necessary at all stages in labor activity.

However, on-job instruction has a number of problems and shortcomings that are influenced both by subjective factors and objective ones.

Frequently there is a violation of the basic principle of on-the-job instruction: until the defense of their diploma project or the taking of state examinations, the students must have work longevity of no less than a year in the speciality in which they are being instructed, or in an occupation that is closely related to it. This requirement presupposes that some of the knowledge, ability, and practical skills are received by the students on the job; therefore it is possible to reduce the volume of the disciplines in the special cycle by reducing the material of a descriptive nature. Documentation pertaining to instructional methodology is drawn up with a consideration of

that principle, and if it is not observed, the essence of that education is distorted.

Furthermore, the methodology of studying the instructional disciplines is created by the empirical method without any theoretical substantiations of the specifics of the forms of instruction. Nor has pedagogical science developed forms of organizing the work involved in the communist indoctrination of the students while on the job. In addition, the existing textbooks contain a large amount of secondary material, have been written in complicated language, and do not contain a sufficient number of examples for the resolution of tasks and questions for self-checking.

All these are shortcomings which, to a certain extent, can be eliminated by educators, methodology experts, and the authors of textbooks. But there are also objective ones.

A peculiarity of the vital activity of the student-worker consists in that such activity occurs in three spheres: production, the family, and the educational institution. Each of them requires definite expenditures of time and energy.

The conducting of a questionnaire study in educational institutions indicates that failures to attend classes are frequently explained by the unevenness of the operation of the enterprises, by the untimeliness of regular vacations and business trips, and other production circumstances. Do all the educational institutions take this into consideration? Unfortunately, not always.

In those pedagogical collectives where the attitude that is taken toward problems of instruction is a thoughtful and self-interested one and where a consideration is taken of the real-life capabilities of the students, one achieves a high level of knowledge by improving the methodology of teaching and checking the knowledge. For example, technical mechanics instructor at the Kishinev Evening Mechanical-Technological Technicum, E. I. Glavenko created an instruction methodology with which, for every topic and every section that the student has covered, he receives a grade, with the criterion for that grade being his level of assimilation: knowledge, mental ability, practical skills. The obtained grade is the result of the checking of numerous goals, with the application of programmed devices and the students' self-monitoring of the material being studied. Exactingness toward the students begins and ends with the instructor's making high demands upon himself -- with an evaluation of his own class and each stage in it.

The work methodology of another instructor at the same technicum, V. S. Mel'nik, is different: for every class he prepares a class outline, slides, overhead-projection graphic aids, and partially completed printed materials to be filled in by the students with minimal expenditures of time. Yet another approach is taken in the methodology of mathematics instructor T. P. Yarova, but the principle is the same: the maximum effectiveness of the classes, the minimum homework. It is no accident that in this technicum the "sifting-out" does not exceed 2-3 percent.

A considerable amount of work was carried out after the issuance of the decree of the USSR Council of Ministers, entitled "The Further Improvement of the On-Job Training of Specialists With Higher and Secondary Special Education. Already individual educational institutions can be boldly called instructional-methodology centers for training specialists by the correspondence-school form: the All-Union Motor-Transport Correspondence Technicum, RSFSR Minavto'trans [Ministry of Motor Transport]; All-Union Agricultural Correspondence Technicum, RSFSR Minsel'khoz [Ministry of Agriculture]; and the All-Union Communications Correspondence Technicum.

The problem of raising the level of instruction, on which collectives at the technicums are working at the present time, is being resolved by means of introducing into the instructional process progressive methods for optimizing it, and for increasing the students' instructional-cognitive activity rate. Wide use is made of TSO [technical means of instruction], graphic aids, electronic-computer technology, elements of problem-oriented and programmed instruction, textual control, analysis of production situations, job-related games, and reference outlines.

Our country's technicums are introducing complete methodological support for the subjects being studied. For example, the Novosibirsk Electrical-Machinery Technicum of Transportation Construction has created instructional-methodology complexes for most of the special subjects. At the Ukrainian Construction Correspondence Technicum, one of the chief areas for improving the classes is the introduction of the problem-oriented method of instruction. The Bobruysk Mechanical-Technological Technicum is making effective use of the analysis of production situations and job-related games.

The documentation on instructional methodology presupposes that the theoretical training is based on practical experience, on a knowledge of production. The ties with the base enterprises exert an influence upon all aspects of life at the educational institution.

If the enterprise takes active part in organizing the acceptance of students into the educational institution, one sees the formation of a student body which takes the attitude that its training is the raising of its proficiency level, and the obtained knowledge is the theoretical basis for that proficiency level. The fulfillment of the schoolyear and diploma projects based on real-life topics gives the enterprises a self-interest in improving the quality of specialist training, and the use of the graduates of the technicum for the purpose of resolving the personnel problems forces them to take an attitude to the needs of the educational institution as being their own needs also. On that basis one sees the development of various forms of ties between the educational institutions and the enterprises, the most effective forms being councils to assist on-the-job students and the concluding of contracts governing creative cooperation.

Forms of joint work that deserve attention are those employed by the Kishinev Mechanical-Technological Evening Technicum for Light Industry, the Zhdanov Machine-Building Technicum, and the Fergana Petroleum Technicum, working with various enterprises. The Fergananeftteorgsintez Production Association has created a council for assisting evening students, the basic function of which council is the creation of favorable study conditions for them. Every year,



after the end of the school year, the association publishes an official order listing the material and psychological incentive awards granted to the students who have successfully completed the school year, and it is developing measures to use the graduates in conformity with the proficiency level and education that they have received. The training of propaganda specialists, political-information specialists, and agitators is carried out by drawing on the on-job trainees. For more than 10 years the chairman of the methodology council for Marxist-Leninist education, under the association's party committee, has been the technicum director. And whereas the collective at the technicum constructs its work under the motto "Let's assure that every young worker in the association received secondary special education," the association considers the educational institution to be its personnel shop.

A form of cooperation that is widespread is the cooperation that the secondary special educational institutions have with our country's institutions of higher learning. For example, the Ukrainian Construction Correspondence Technicum has been given a considerable amount of assistance in improving its instructional methods by Donetsk State University and Makeyevka Engineering-Construction Institute. Contracts have been concluded with those institutions of higher learning to achieve the further improvement of the joint instructional-methodology and indoctrinational work for purposes of improving the quality of training of specialists with secondary special education. There has been an exchange of experience in organizing the independent work of the correspondence-school students, the organizing of schoolyear and diploma projects, practical work on the job, and the use of technical means in the instructional process.

Indoctrinational work with on-the-job students requires special care. In this regard every contact with the students has its indoctrinational aspect. A postcard-reminder that has been sent, a thorough analysis of a control project, and especially the classroom sessions themselves -- all these things are evaluated critically by the students, through the prism of their own convictions, their own view of the world.

A task of primary importance in ideological-indoctrinational work is a thorough study of Marxist-Leninist theory. It is necessary to make a careful selection of the instructional material for the classroom sessions with a consideration of the specific nature of the work on the job and to instill in the students the ability to work independently with primary sources and educational literature, to isolate the basic, determining theoretical principles in the course being studied, and to relate Marxist-Leninist theory to the practical aspects of communist construction and their own labor experience.

NIIVSh [Scientific Research Institute of Problems in Higher Education] and the Instructional-Methodology Administration for Secondary Special Education, of USSR Minvuz, have developed a target program entitled "Research on Problems of On-the-Job Secondary Special Training," in which there is a definition of such tasks as the improvement of the quality of instruction; the improvement of the content, forms, and methods of the communist indoctrination of the students; the improvement of the administration of the educational institutions; and the reinforcement of the ties with production. In conformity with this program,

our laboratory has developed the "Coordination Plan for Scientific-Methodology Work on Problems Involved in the On-Job Training of Specialists in 1984-1985," in which consideration is taken of the work carried out by the republic-level and branch methodology centers and the secondary special correspondence educational institutions.

We have also organized the monthly seminar, "Ways to Increase the Effectiveness of On-Job Training." The participants in the work of that seminar include the commissions of correspondence and evening instruction, under the NMK; the correspondence and evening instruction sections, under the Moscow directors council; and workers at secondary special educational institutions in Moscow city and Moscow Oblast. The following questions have been discussed: the work experience in providing the communist indoctrination of the on-the-job students; the organization of intratechnicum monitoring of the correspondence department; and effective forms of relating instruction to production.

At the present time the laboratory is developing recommendations for providing complete instructional-methodology support to the instruction in the correspondence and evening forms. The purpose of these recommendations is to assist the collectives at the technicums in resolving the problem of improving the quality of on-the-job instruction. Also aimed at the resolution of this task is the preparation of recommendations for administering the independent work of the correspondence-school students during the period between sessions, and recommendations for using the most effective forms of relating the educational institution to production.

The Scientific-Methodology Study Center for Secondary Special Education, USSR Minvuz, has prepared a methodological letter entitled "Orientation and Survey Classes With Correspondence-School Students," in which it is noted that the success of correspondence-school instruction is largely determined by the ability of the pedagogical collective to achieve the correct and effective organization of the students' independent work, to give them the necessary assistance in their studies, and to carry out prompt and efficient checking.

The curricula for the correspondence form of instruction provide for various types of classroom sessions, among which a role of primary importance is assigned to orientation and survey classes. An analysis of the work performed by individual secondary special educational institutions indicates that they are not always conducted effectively, and their methodological support cannot be deemed to be satisfactory.

The purpose of this letter is to provide certain recommendations for the organization and methodology of conducting orientation and survey classes on the basis of the generalized positive experience of the best pedagogical collectives.

The new curricula that were approved in 1983 stipulate:

-- orientation classes dealing with the principles of the organization of independent work (6-8 hours), which are supposed to acquaint the students with the specifics of correspondence education, its peculiarities in the branch and

in the specific educational institution, and the efficient methods of studying and working with books; and with the rules for preparing course outlines, completing the control projects, and preparing for examinations and quizzes;

-- orientation classes for certain subjects which are the most complicated ones for independent study, which classes are supposed to demonstrate the importance of the particular subject for acquiring vocational knowledge and mental abilities, and its place in the logical structure for the specialty and to provide practical recommendations for independent work when studying the subject and carrying out the control and course projects that have stipulated by the teaching plan.

The survey classes systematize and deepen the students' knowledge that has been obtained during the independent study of the subject, and concentrate the students' attention on the basic principles and laws that are necessary for the solid assimilation of the subject.

The carrying out of the orientation and survey classes for correspondence-school students must be preceded by a large amount of preparatory work, which begins with the drawing up of the teaching plan and which requires that the instructor must have not only a thorough knowledge of the subject, but also a definite amount of work experience. When preparing the curriculum, it is necessary to take into consideration the fact that the content of the survey classes must develop in the future specialists an integral system of knowledge in the subject, must contribute to their solid assimilation of the key questions in appropriate area of scientific practice, and must determine the direction to be taken in the independent study of the particular discipline. Special attention should be devoted to the purposeful selection of the training material. to the comparison between the existing curriculum and the textbook, and to determining what topics and sections of the course have received a sufficiently complete and up-to-date reflection, and the extent of depth and understandability with which they are treated in the textbook, and it is also necessary to give recommendations concerning the study of specific additional literature.

For the more complete and more efficient use of the time allocated for the survey classes, the subject (cycle) commissions, when considering the calendrical-topical plans, must take into consideration the duplication of the topics in the related subjects and must determine which instructor in a particular discipline should include that topic in the plan for conducting the survey classes, while, for the other subjects, it will be studied independently by the students.

In the practical situation when training specialists on the job, various forms were developed for organizing the educational process, which forms were influenced by the differentiation of the study body. Depending upon the conditions to be determined by the material base of the technicum (branches, UKP), with a consideration of the place of residence and the makeup of the student body, the orientation and survey classes can also be conducted either during the period between sessions or during the period of the session. If the students can visit the technicum or the structural subdivisions (branch, UKP) during the period between sessions in the evening, it is desirable to



organize the classes according to a rigid schedule that has been drawn up in conformity with the teaching plan and the schedule for the training process.

For groups of students who are unable to visit the technicum (branch, UKP) during the period between sessions, the orientation and survey classes are conducted during the period of the session. It is desirable to make it a practice to have the instructors travel out to the base enterprise to conduct consultative sessions. This is something that significantly improves the organization of the independent work.

Then the letter states that, when selecting the methodology for conducting the orientation and survey classes, it is necessary to be guided by the basic principles of modern didactics and to take into consideration the specifics of on-the-job instruction. The orientation classes will be conducted more effectively if the students have a curriculum with methodological instructions, control assignments, and a textbook in the particular subject. In the process of instruction, the students acquire the practical skills required for independent work, and therefore the methodology of conducting the classes in the various subjects is different from that in the upper classes. The introduction of upper-class students into the subject must be based on the previously studied material and the work experience of the advanced enterprises, and it must be related in a well-argued manner to the students' labor activity.

The organizational form of the survey class and the methods and means of conducting it must provide for the inculcation in the students of the ability to work independently with the training literature, to isolate the basic principles in the course, and to relate the instructional material to the practical aspects of communist construction and their own personal labor experience.

The instructor must carefully plan every class, providing for various necessary elements, depending upon the instructional and indoctrinational tasks, the peculiarities of the student body, and the time and place for conducting the class:

- generalized answers to questions that the students ask with regard to the material that was considered in previous classes and in the process of self-training;

- the generalization and refinement of individual principles in the instructional material for the more precise systematization of that which has already been assimilated by the correspondence-school students or for the transition to the consideration of new questions;

- the immediate presentation of new material and the explanation of its most complicated and most difficult topics;

- the communication of the topic and the plan for conducting the next survey class and the list of questions which will not be considered at the classes, but which must be independently studied by the students by the next class;



-- homework assignment aimed at developing the independent work of studying the material for students who regularly visit the educational institution during the period between sessions.

When striving for the graphic nature of instruction, the instructor must equip the class with technical means and must use diagrams, tables, charts, and blank forms, without at the same time forgetting the effectiveness of their use. At classes it is necessary to recommend to the students that they bring their course outline, so that they can write in the basic principles of the instructional material being presented.

Many correspondence technicums prepare methodological sets that include graphic means (transparencies, overhead-projection slides), questions for actualizing the knowledge and reinforcing the instructional material, course outlines for the particular topic, inquiry cards, etc. Constant improvement of the methodological sets for each topic contributes to the improvement of the quality of conducting the classes.

Depending upon the complexity of the subject, the volume of the training material, the extent to which the students are provided with textbooks and teaching aids, and also the composition of the group, the classes consider in detail the most complicated questions in the curriculum or the section which are not sufficiently illuminated in the textbook.

The presentation of new material must be carried out with the constant participation of the students; the joint mental activity of the instructor and the student is necessary. The instructor must refer to the students' practical activity and must illustrate the theoretical material by using examples taken from production practice.

The reinforcement of the material that has been covered is possible by means of generalization or as a verification of assimilation. In individual instances it is desirable to use machine or nonmachine programmed control to establish feedback with the students. For the disciplines in the special cycle, especially for subjects in the technological and economic areas of specialization, an element of the class which is becoming increasingly widespread in our country's secondary special educational institutions is the device which has been given the name "job-related game," in the process of which the students resolve real-life production tasks and analyze the production situations.

When planning and conducting orientation and survey classes, special attention should be devoted to questions of the students' ideological-political indoctrination. The indoctrinational influence should be carried out primarily through the content of the educational discipline.

A factor of tremendous importance in using the indoctrinational opportunities of the orientation and survey classes is the instructor's personality, his ideological-political conviction, his knowledge of his subject, his highly-principled approach in evaluating facts and phenomena, his overall erudition and culture, and his ability to create a favorable situation with high expectations from his students. The instructor's creative approach to the

classes contributes to arousing in the students an interest in studying the subject and helps to develop a responsible attitude toward the work of instruction -- the basis for indoctrinating a communist attitude toward vocational labor.

In conclusion it was noted that correspondence-type instruction is being conducted for more than 300 specialties, with a different organization of the classes depending upon the peculiarities of the student body. Therefore it would appear to be impossible to determine a single methodology for conducting the orientation and survey classes, but the basic recommendations given in this letter must be used when conducting classes with correspondence students.

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#### Correspondence Courses for Economists

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[ Article by A. Romanov, assistant professor, All-Union Economic-Finance Correspondence Institute, candidate of economic sciences, Vladimir: "Critical Problems of Correspondence Instruction"]

[Text] Today two-thirds of our future economists are learning their specialty while remaining on the job, of whom 80 percent are doing so by using the correspondence-school form of instruction. Taking into consideration the demographic situation that has been developing in our country during the current decade, it can be assumed that that figure will increase. Consequently, in the system of measures to assure the further improvement of higher economic education, the questions of improving the correspondence-school forms of instruction cannot fail to occupy an important place. The improvement in this area should probably begin with the organization of the admission of the students into the correspondence institutions of higher learning. It is no secret that today we are striving to have among the correspondence students as many "specialists" as possible, by which we mean, in the generally accepted terminology, those persons who have already been working in the particular specialty. And that, of course, is correct: it is only students like that who have the opportunities to obtain completely valid training by means of correspondence instruction, when there is a considerable reduction in the amount of time set aside for lecture-type classes and there is a lack of practical work on the job. With the purpose of attracting the student "specialists" for training, the correspondence institutes, departments, and sections have been carrying out a large amount of organizational, agitational work among the secondary school graduates who are potential correspondence students and have been organizing preparatory courses. The "specialist" secondary school graduates who have successfully passed the entrance examinations, provided they have six months work experience in the specialty of instruction, are admitted first of all into the institute.

Despite all this, the existing system of entrance examinations proves for many "specialist" secondary school graduates to be an unsurmountable barrier. The

dropout rate of secondary school graduates is especially high for the mathematics examination: it sometimes reaches 30-40 percent and the persons who prove first of all to be its "victims" are the "specialists" who, as a rule, graduated from school long ago and have not had anything to do with mathematics for a number of years. But the majority of the "nonspecialists" who had previously attended school do pass this examination successfully. The "specialists" also fail to withstand the "competition" when taking other entrance examinations. As a result, the efforts to bring them into the system frequently fail to yield the desired result.

What, then, is the way out of this unfavorable situation? It seems to us that there are two possible resolutions: either give entrance examinations to the "specialists" on the basis of simplified, lightened curricula and even make up for the gap in their knowledge during the process of instruction, by correspondingly reorganizing the teaching plans and curricula for that purpose; or, as seems to be more correct, organize under the correspondence institutions and their territorial subdivisions preparatory departments for instructing the "specialists" by allowing them to take time off from the job and paying them, during the instruction period, a stipend charged to the enterprises and organizations that have sent the secondary school graduates to those departments. In our opinion, this step would be justified, since it would open the doors of the correspondence institutions to that group of students that the national economy needs, and would substantially facilitate the training of truly efficient economists. However, even if the situation were treated this way, apparently "nonspecialist" students would also be admitted as first-year students: because there is a rather large number of people who have been consciously striving to receive higher economic education, who have good training in the volume of the secondary general-educational school, but who, for various reasons, have been unable to attend a regular institution of higher learning. The resolution of the problems that arise with regard this variety of the student body must, obviously, lie in allowing the "specialists" and "nonspecialists" to study in accordance with different teaching and topical plans. The plans for the "nonspecialists" must provide for a larger number of regular classes, and mandatory instructional practice.

It would be desirable also to introduce certain other changes into the organization of the instructional process during the course of correspondence instruction. The opinion has already been expressed in the press that this process, in the economic institutions of higher learning, is overloaded with the general-educational disciplines. For example, under the conditions of our correspondence institution of higher learning, auditorium-type classes on economic geography and economic history during the first year are allocated 70 hours; the students study foreign languages for 60 hours during the first two years; and study higher mathematics for 140 during years I-III. At the same time the classroom-type lectures in the third year constitute, for the principles of the scientific organization of labor for the specialty "Planning of Industry," only 20 hours; and for establishment of labor norms in industry, 30 hours. Even for the specialty "Economics of Labor" for classroom-type lectures in the establishment of labor norms in industry, a total of only 50 hours have been allocated. In the fourth year, the amount of time set aside for studying the questions of estimating the production costs in industry is



26 hours for lecture classes and 14 hours for practical classes. It would seem to be necessary to state that the general-educational training courses should be more closely tied in with the special disciplines. In particular, the instruction of higher economics in the economic institutions of higher learning should be constructed in such a way that mathematics is an applied discipline with respect to such subjects as the machine processing of economic information, ASUP [automated production control systems], planning of the national economy, and, if possible, becomes a component part of them.

The attainment of the currently required high level of occupational training of economists with higher education, as was justifiably noted by the participants in the discussion that has been carried out in this magazine, is assured, in particular, by relying upon the aid provided by the arsenal of active methods of instruction (AMO). It must be said that the use of active methods of instruction in correspondence-type higher schools is a problem that is considerably more difficult than in regular ones, primarily because of the comparatively small number of hours set aside for the conducting of lecture-type classes. Nevertheless this problem must be resolved. For that purpose it is obviously necessary to reduce the number of lecture-type hours in the auditorium, while increasing the amount of time during which the students independently study the questions of theory, in order to conduct the regular practical classes with the mandatory application of active methods of instruction.

One cannot fail to direct attention to the fact that the use of active forms and means of instruction, both in correspondence-type higher schools and in regular ones, is inevitably linked with an increase in the expenditure of the instructor's time to prepare for the classes. Meanwhile the existing quotas for those expenditures are already low: today, when a theoretical course is given repeatedly, the existing quotas allow for only one hour per academic hour of classes conducted. The interests of the job at hand, consequently, require that the quotas be increased.

A question that deserves special attention is the question concerning one of the final stages in the training of specialists in the correspondence institution of higher learning, namely the writing of graduation projects. Our experience attests to the fact that these projects frequently are of substantial practical interest for those enterprises and organizations whose materials formed the basis of the projects. Many of the recommendations that are formulated in graduation projects receive their practical implementation, helping to improve the planning and accounting at the enterprises and to improve the mechanism of cost accountability.

Meanwhile the number of our students who are engaged in graduation projects can literally be counted on both hands. There are several reasons for this situation. First, the process of expansion of the practice of writing graduation projects is being restrained by the instruction guides and norm lists that exist in the higher school system. For example, there is a statute in accordance with which persons desiring to work on graduation projects must necessarily have "grades of outstanding or good in the special disciplines. In the correspondence-type institutions of higher learning, these students by no means constitute the majority as yet. Secondly, the professors and



instructors have little self-interest in students' writing of graduation projects. The scientific director of a graduation project is given the responsibility of rendering assistance to the student in refining the content of the topic and in preparing the assignment for the development of the graduation project, and in selecting the literature; a considerable amount of time is required for the scientific direction and aid in the writing of the graduation project, the preparation of an appraisal of it, the providing of regular information to the department concerning the rate of execution of the graduation projects, etc. In order to carry out all this work, the scientific director is given a total of only 25 hours in the report concerning the fulfillment of the plan for instructional work load. According to estimates provided by instructors who regularly direct graduation projects, 25 hours constitutes one-third, or, at best, one-half the actual expenditures of time to direct a graduation project.

And there are also other reasons. As is well known, while he is preparing and defending a graduation project, a student can be given an additional leave for a 4-month period. However, the amount of earnings paid to him during that time cannot exceed 100 rubles. Consequently, the graduating students of correspondence institutions of higher learning, as a result of taking the additional leave, bear, as a rule, a tangible loss in income. And if one considers that the students in the fifth year are, in the overwhelming majority, family people, it will be understandable why they prefer to take the state examinations, rather than to write graduation projects.

On the surface, it would seem that the unjustifiably small percentage of students desiring to defend graduation projects among the graduating students of correspondence institutions of higher learning is a saving of state funds. But it is a kind of "penny-wise, pound-foolish" saving. I am convinced that the expansion of the practice of writing graduation projects in the correspondence higher economic school system is a major reserve for improving economic work as a whole in the national economy. Failing to use it is not intelligent. It is necessary, to the extent possible, to eliminate the limitations that exist on the path to using this reserve, and to increase the self-interest of the instructors and the students in the execution of high-quality graduation projects that are of practical value for the national economy.

A situation that has not been contributing to improving the quality of the training of the correspondence student is the situation which frequently develops around him in the collective at his place of work. It is well known that a student who is successfully executing a training plan is authorized to receive a paid educational leave for the period required to take orientation and examination sessions and to write a graduation project. But many students do not take such leave, but rather combine participation in the sessions or the execution of the graduation assignments with their work. And this is done not because they do not need that leave or it is materially unprofitable. There is usually a different reason: the work that would normally be done by the person who is going on leave has to be fulfilled without compensation by someone else. As a result of a questionnaire conducted among the third-year students at our branch, it was ascertained that 30 percent of the persons who responded to the questionnaire notice either an indifferent or a disdainful

attitude on the part of their co-workers. It would seem that this situation could be avoided if, for the period of time when the correspondence student is on an educational leave, the persons who perform his work are given additional payment, at least for the difference between their wages and the amount that is paid for the period of the educational leave (100 rubles). Inasmuch as the bulk of the correspondence students receive monthly wages that considerably exceed 100 rubles, this additional payment could serve as a definite incentive for having all the correspondence students use the leave that has been stipulated for them, and, on that basis, gaining a better mastery of the material being studied.

The process of training highly qualified economists has not only a qualitative aspect, but also a quantitative one. In order to clarify its significance, we would like to point out that the share of workers with higher education among the persons occupying economic positions in Vladimir Oblast is 40 percent of the share of such workers in the total number of managers and specialists. An especially large shortage is felt (and, incidentally, this also pertains to other regions) for specialists with higher education in the area of the accounting and analysis of economic activity and norm determination, and there is a shortage of specialists in financial agencies and the bank system. It is obvious that it is necessary to expand the training of these kinds of specialists by using all forms of instruction.

The resolution of this task, like the improvement of the quality of economist training, depends to a large degree upon the material-technical support of the educational process and upon the overall working and everyday living conditions of the professor and instructor staff and the students. A graphic example of this is our institute. Even in Moscow its central services and instructional auditoriums are situated in a crowded building that has been poorly adapted for that purpose. The situation is even worse in many of the territorial subdivisions. They have a shortage of auditoriums, they do not have the opportunity to create modern laboratories, training centers, or reading halls, or to accommodate technical means of instruction, and the auxiliary services are working in cramped conditions. Because of the absence of dormitories, the students are forced, during the session period, to live in private apartments, where frequently there is a complete lack of the elementary conditions for studying. A problem that frequently becomes an unresolvable one for the territorial subdivisions is the providing of housing, and this in its turn has been restraining the opportunity to attract experienced, well-qualified instructors to work here. That factor is especially important for correspondence institutions. Questions of the material-technical supply of our schools, branches, and UKP have not been resolved at the proper organizational level.

It is understandable that it is impossible to resolve all these questions at once. But they must be resolved. The correspondence institutions and their territorial subdivisions are an inseparable and important component of the entire higher educational system, and they must not be, from the point of view of material-technical support, in the unequal position in which they very frequently find themselves today.

I would like to express a few views concerning the question of what kind of economists (those with a broad or a narrow area of specialization) it is necessary for us to train. At the present time the higher school system has been basically assigned the direction of training economists with a broad area of specialization. These specialists, as has been justifiably noted by a number of participants in the discussion of higher economic education, possess a broad horizon, are very erudite in the area of the social sciences, and have a high level of general theoretical training in the special economic disciplines. At the same time there is a considerable weakness in another side of their proficiency -- their mastery of the skills needed in the practical activity of an economist, their ability to employ the special knowledge that they have acquired at the institute.

In this regard it would be desirable to note that, although our country has 227 large-scale branches of industry and more than 500 individual types of industrial production entities, we are still continuing to train students in such a broad specialty as "Planning of Industry." As a result, the period of adaptation on the job stretches out for two years or more for our graduates. This is too costly for our government. When it expends large amounts of money for higher economic schools, it has the right to get specialists who, when they arrive on the job, are able immediately (rather than two years later) and at a high professional level to carry out their functions. Consequently, at the present time the higher school system must be oriented toward the training of the economist with a narrower area of specialization.

In conclusion I would like to say a few words about the social prestige attached to the occupation of economist. For a long time there have been discussions to the effect that that prestige is lower than the desired level. However, the situation has not been changing fundamentally, partially because it frequently happens that nonspecialists are continuing to work in economic positions. At the same time there also prevails the erroneous but very viable idea of the "inoffensiveness" and "indifference" of the occupation of economist. It is felt that the incompetence of a person who occupies such a position cannot cause society any particular harm. There exists a vital necessity to make it impossible for any persons who lack the appropriate education to occupy any economic position. For the time being, this step has been undertaken only with respect to chief accountants. It would be desirable to expand this procedure to include other economic positions, and that would undoubtedly make it possible to promote the growth of the prestige attached to the occupation of economist, to attract talented young people to the economic institutions of higher learning, and, in the final analysis, to raise the overall level of economic work in our country.

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